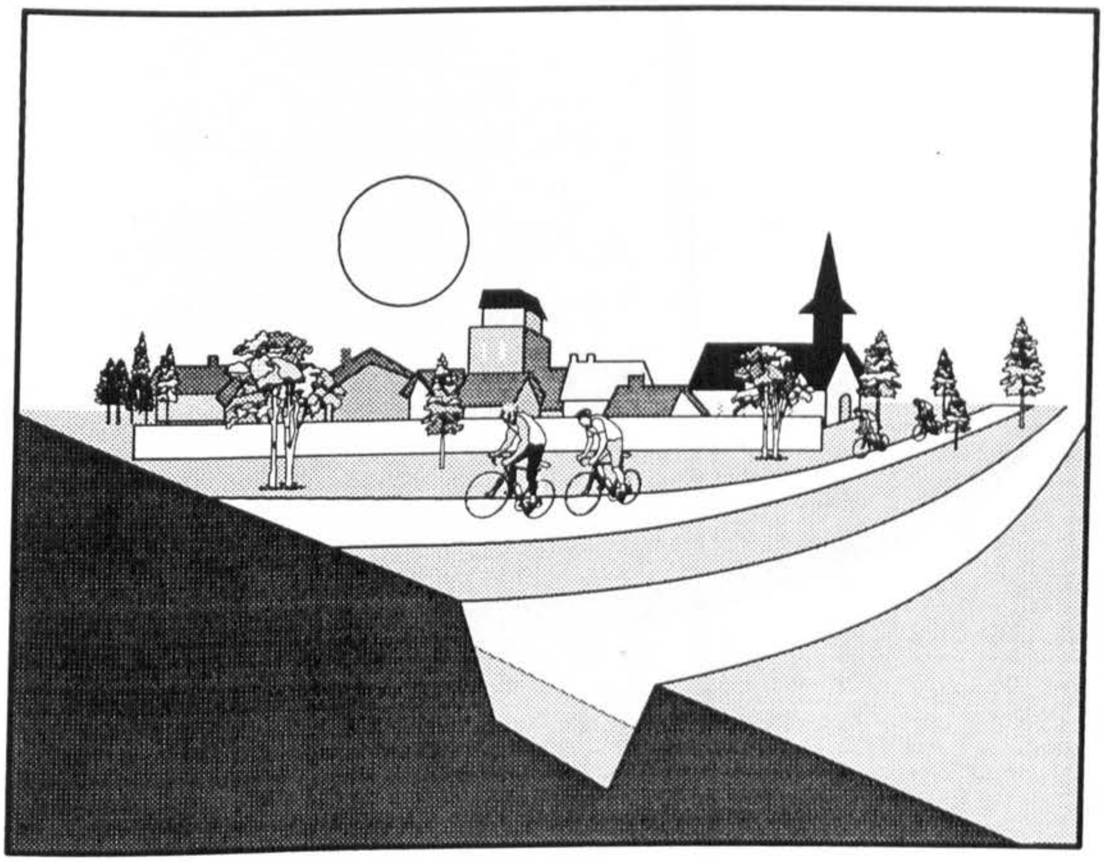
US Army Corps
of Engineers
New Orleans District

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
DOTD

Amite River and Tributaries, Louisiana

East Baton Rouge Parish Watershed
Flood Control Projects



Feasibility Study

Volume 2 of 4
Appendices A,B, and C
February 1995

REVISED
DRAFT

If you have any questions or require additional information, please contact Mr. Frank Vicidomina, Study Manager, U.S. Army Corps of Engineers, New Orleans District, P.O. Box 60267 New Orleans, LA 70160, telephone number (504) 862-1597.

APPENDIX A

FEASIBILITY COST-SHARING AGREEMENT

AGREEMENT BETWEEN

THE UNITED STATES OF AMERICA

AND

THE STATE OF LOUISIANA

FOR THE AMITE RIVER AND TRIBUTARIES STUDY

THIS AGREEMENT, entered into this 5th day, of February 1985, by and between the United States of America (hereinafter called the "Government") represented by the Contracting Officer executing this Agreement and the State of Louisiana (Hereinafter called the "Study Sponsor"),

WITNESSETH, that

WHEREAS, the Public Works Committee of the United States Senate adopted a resolution on 14 April 1967 that authorized the Corps of Engineers to conduct a study to determine the feasibility of providing improvements for flood control and other water related land resource needs including water supply, water quality control, hydropower, recreation, and fish and wildlife; and

WHEREAS, the Corps of Engineers has conducted a reconnaissance phase study of flood problems and other water related land resource problems and potential solutions pursuant to this authority, and has determined that further study in the nature of a "Feasibility Phase Study" is required to fulfill the intent of the study authority and to determine the extent of the Federal interest in solution to flood problems and other water related land resources problems; and

WHEREAS, the Study Sponsor considers it in its best interest to have the "Feasibility Phase Study" promptly completed, and is willing to

cost-share up to 50% of the total costs of the "Feasibility Phase Study" as indicated in Article I.

WHEREAS, the Secretary of the Army may determine that it is necessary for cost-sharing by non-Federal interests on the authorized "Feasibility Phase Study."

NOW THEREFORE, the parties agree as follows:

ARTICLE I - CONSIDERATION AND PAYMENT

a. Should the Secretary of the Army determine that cost-sharing is necessary, the Study Sponsor shall pay, as further specified in this agreement, 50% of the total costs of the Feasibility Phase Study for any or all of the following items:

Basinwide Protection

Comite River Diversion

East Baton Rouge Parish

Monte Sano Bayou
Jones Creek
Bayou Fountain
Clay Cut Bayou
Hurricane Creek
Nonstructural measures

Livingston Parish

Grays Creek and Tributaries
Effects of roads and bridges on
Restricting Flood Flows
Nonstructural measures

Ascension Parish

New River, Black Bayou, Bayou Narcisse,
and Bayou Francois
Sorrento
Nonstructural measures

The term "total costs of the feasibility phase study" means:

(1) For any Feasibility Phase Study that is in progress at the time the Secretary of the Army decides to proceed with cost-sharing as provided in this agreement, all actual costs of the Feasibility Phase Study that are incurred by the Government or the Study Sponsor pursuant to the terms of this agreement commencing 60 days after the date the decision to proceed with cost-sharing is made, including supervisory and administrative costs.

(2) For any Feasibility Phase Study that is not in progress at the time the Secretary of the Army decides to proceed with cost-sharing as provided in this agreement, all actual costs of the Feasibility Phase Study incurred by the Government or the Study Sponsor pursuant to the terms of this agreement, including supervisory and administrative costs.

b. A Feasibility Phase Study shall be deemed to be complete for cost-sharing purposes with concurrence of the Study Sponsor when the Division Commander issues his notice of completion of the Feasibility Report.

c. The Government, using funds contributed by the Study Sponsor and appropriated by the Congress, shall expeditiously make and complete the Feasibility Phase Study, applying those procedures usually followed or applied pursuant to Federal laws, regulations and policies. The Government will consult with the Study Sponsor in determining the advisability and scope of work to be performed by contract. All bid proposals will be reviewed by the Study Sponsor at their option and comments will be provided to the Government for use in selection of contractors. Award of any contracts with appropriated funds or Study Sponsor contributed funds shall be exclusively within the control of the Government. Concurrent review of work performed by a contractor by the Government and Study Sponsor will be performed in accordance with the contract provisions.

d. The Study Sponsor makes such contributions with the clear understanding that it does not obligate the Government to either recommend authorization of or undertake the construction of a Federal project upon completion of the Feasibility Phase Study. The Study Sponsor shall not have any recourse for payment or reimbursement of any nature whatsoever from the Government for contributions tendered pursuant to the terms of this agreement (except with respect to excess cash contributions as set forth in Article II.e.).

ARTICLE II - METHOD OF PAYMENT

a. To provide for consistent and effective communication between the Study Sponsor and the Government during the term of study, the Study Sponsor and the Government will appoint representatives to coordinate on scheduling, planning, and other matters relating to the Feasibility Phase Study.

b. The Government will notify the Study Sponsor of the decision to proceed with cost-sharing as provided in this agreement within seven

working days of the date the decision to proceed with cost-sharing is made.

(1) In the event the Feasibility Phase Study is in progress at the time this decision is made, the Government will, in addition to notifying the Study Sponsor of that decision, also provide the Study Sponsor with an estimate of the Study Sponsor share of Feasibility Phase Study Costs for the remainder of the Government Fiscal Year. The Study Sponsor will then satisfy its obligation to provide 50% of the total "Feasibility Phase Study" costs for the remainder of the Government Fiscal Year by providing within 60 working days of notice by the Government cash contributions, and/or in-kind services during the course of the remainder of the Government Fiscal Year, equal in amount to the Study Sponsor share of Feasibility Phase Study costs for the remainder of the Government Fiscal Year.

(2) In the event the Feasibility Phase Study is not in progress at the time the decision to proceed with cost-sharing is made, the Government will, at the time it provides notice of the decision to proceed with cost-sharing, also provide the Study Sponsor with a date on which the Government expects to initiate the Feasibility Phase Study and an estimate of the Study Sponsor share of the Feasibility Phase Study costs for the Government Fiscal Year in which the Feasibility Phase Study is to be initiated. The Government will obtain the Study Sponsor Share of the total costs of the Feasibility Phase Study from the Study Sponsor for the Government Fiscal Year in which the study is to be initiated, prior to initiating the Feasibility Phase Study. The estimated Study Sponsor's share of the Feasibility Phase Study costs for the Government Fiscal Year will be limited to 50 percent of the estimated costs for the Feasibility Phase Study for the Government Fiscal Year.

c. For subsequent Government Fiscal Years; the Government will provide the Study Sponsor with a statement of the Study Sponsor's share of the total costs of the Feasibility Phase Study for that Government Fiscal

Year six months before the start of the Government Fiscal Year. The Study Sponsor will provide its share of the total costs of the Feasibility Phase Study for that Government Fiscal Year by providing at the start of the Government Fiscal Year cash contributions, and/or in-kind services during the course of the Government Fiscal Year, equal to the Study Sponsor share. For each subsequent Government Fiscal Year, the estimate of the Study Sponsor's share for the pending Fiscal Year will be limited to 50 percent of the estimated costs of the Study in the pending Government Fiscal Year.

d. The Study Sponsor shall make any cash contributions required under this agreement available to the Government by either cash payments to the Government or by deposits of cash into an escrow account acceptable to the Government. The Government will draw on such contributions as it deems necessary to cover contractual and in-house obligations as they occur.

e. Upon completion of the Feasibility Phase Study and resolution of any contract claims and appeals, the Government will compute the total costs of the Feasibiltiy Phase Study and tender to the Study Sponsor a final accounting of its share of the study costs. In the event the Study Sponsor has paid less than its share of the total Feasibility Phase Study costs at the time of the accounting, the Study Sponsor agrees to pay the Government within 90 calendar days after receipt of written notice, whatever sum is required to meet the Study Sponsor share of study costs, provided the Study Sponsor received prior written notice that additional funds would be necessary to complete the Study and the Study Sponsor concurred. In the event the Study Sponsor paid more than its share of total Feasibility Phase Study costs at the time of the final accounting, the Government will return to the Study Sponsor within 90 calendar days the excess cash contribution.

f. HOWEVER, where the Study Sponsor is the State itself, this agreement does not obligate future legislative appropriations or other funds for such performance and payment when obligating future

appropriations or other funds would be inconsistent with State constitutional limitations.

ARTICLE III - CREDIT FOR IN-KIND SERVICES

When approved by the Government, the Study Sponsor may receive a credit for in-kind services provided in connection with accomplishment of the Feasibility Phase Study. The credit shall be applied against the requirement established in Article Ia to pay 50% of the cost of the Feasibility Phase Study, but shall not exceed 50% of the total Study Sponsor requirement for Feasibility Phase Study costs. The procedures and methods for computing the value of in-kind services shall be agreed to by the Government and the Study Sponsor prior to the provision of any such services.

ARTICLE IV - TERMINATION

This agreement may be terminated by either party within thirty days by providing written notice to that effect. There shall be a final accounting and settlement upon termination, with all costs including costs incurred as a result of the termination to be cost shared on a 50-50 basis as is otherwise provided under the terms of this agreement.

ARTICLE V - DISPUTES

Any dispute arising under this agreement which is not disposed of by mutual consent shall be decided by the Contracting Officer who shall reduce his decision to writing and mail or otherwise furnish a copy to the

Study Sponsor. The decision of the Contracting Officer shall be final and conclusive unless, within 30 days from the receipt of such copy, the Study Sponsor mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Corps of Engineers Board of Contract Appeals. The decision of the Board shall be final and conclusive. Pending final decision of a dispute hereunder, the Study Sponsor shall proceed diligently with the performance of the agreement in accordance with the Contracting Officer's decision.

ARTICLE VI - MAINTENANCE OF RECORDS

The Government and the Study Sponsor shall keep books, records, documents and other evidence pertaining to costs and expenses incurred pursuant to this agreement to the extent and in such detail as will properly reflect total Feasibility Phase Costs. The Government and the Study Sponsor shall maintain such books, records, documents and other evidence for inspection and audit by authorized representatives of the parties to this agreement.

ARTICLE VII - RELATIONSHIP OF PARTIES

The parties to this agreement act in an independent capacity in the performance of their respective functions under this agreement, and neither party is to be considered the officer, agent, or employee of the other.

ARTICLE VIII - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, or other elected official, shall be admitted to any share or part of this agreement, or to any benefit that may arise therefrom.

ARTICLE IX - COVENANT AGAINST CONTINGENT FEES

The Study Sponsor warrants that no person or selling agency has been employed or retained to solicit or secure this agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Study Sponsor for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this agreement without liability or in its discretion to add to the agreement or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA

BY ______________________

Colonel Corps of Engineers
District Engineer
Contracting Officer

WITNESSES:

____

____

STATE OF LOUISIANA

BY ______________________

Secretary
Department of Transportation
and Development

CERTIFICATE OF AUTHORITY

I, Norman L. Sisson do hereby certify that I am the General Counsel of the Department of Transportation and Development, State of Louisiana, that the State of Louisiana is a legally constituted public body with full authority and legal capability to perform the terms of the agreement between the United States of America and the State of Louisiana in connection with the Amite River and Tributaries Study, and with full authority and legal capability to pay judgments for damages through the Legislature of the State of Louisiana, if necessary, in the event of the failure to perform, and that the persons who have executed the agreement on behalf of the State of Louisiana have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certificate this 5th day of February, A.D., 19 85.

Norman L. Sisson
General Counsel
DOTD, State of Louisiana

FIRST SUPPLEMENT TO THE

AGREEMENT BETWEEN

THE UNITED STATES OF AMERICA

AND

THE STATE OF LOUISIANA

FOR THE AMITE RIVER AND TRIBUTARIES STUDY

THIS SUPPLEMENTAL AGREEMENT is entered into this_____ day of ________ 1990, by and between the United States of America (hereinafter called the "Government") represented by the Contracting Officer executing this Supplemental Agreement and the State of Louisiana through the Louisiana Department of Transportation and Development (hereinafter called the "Study Sponsor"), represented by its Secretary,

WITNESSETH THAT:

WHEREAS, on 5th day of February 1985, the Government and the Study Sponsor entered into a Cost-Sharing Agreement for the Amite River and Tributaries Study (hereinafter called the "Original Agreement"); and

WHEREAS, the Study Sponsor has requested that the Original Agreement be modified to include the Darlington Reservoir; and

WHEREAS, the Study Sponsor is currently cost-sharing the Amite River and Tributaries Study on a 50-50 basis; and

WHEREAS, the Study Sponsor is willing to cost-share on a 50-50 basis the increased cost of this modification to include the Darlington Reservoir in the Amite River and Tributaries Study.

NOW THEREFORE, the parties agree as follows:

The Original Agreement for the Amite River and Tributaries Study is hereby modified to include the Darlington Reservoir.

The Secretary of the Army has determined that cost-sharing is necessary, therefore the Study Sponsor shall pay, as is specified in this Supplemental Agreement, 50% of the total costs of the Feasibility Phase Study for the Darlington Reservoir Study.

All the Articles of the Original Agreement, not specifically changed or modified herein, shall remain in full force and effect, and apply to this Supplemental Agreement as if they were incorporated herein and made a part hereof.

IN WITNESS WHEREOF, the parties hereto have executed this Supplemental Agreement as of the day and year first above written.

UNITED STATES OF AMERICA

BY ______________________

Colonel Corps of Engineers
District Engineer
Contracting Officer

WITNESS:

____

____

STATE OF LOUISIANA

BY ______________________

Secretary
Louisiana Department of
Transportation and Development

APPENDIX B

EAST BATON ROUGE PARISH
DRAINAGE PROJECTS

Table 24
1989-1993 CAPITAL IMPROVEMENT PROGRAM DRAINAGE IMPROVEMENT PROJECTS
Horizon Plan
Comprehensive Land Use and Development Plan Baton Rouge, Louisiana

DESCRIPTION	IMPROVEMENTS	ESTIMATED COST
1. Aster Street - Chimes St.	Lined Canal & Closed Conduit	$ 2,578,030
2. Avants Canal Lateral of Jones Creek (Jones Creek to Florida Blvd)	Lined Canal	1,009,500
3. Banks Lateral of Bayou Monte Sano	Closed Conduit	765,600
4. Bayou Fountain	Earth Canal	3,768,750
5. Bayou Manchac (Amite River to MS River)	Earth Canal	3,000,000
6. Beaver Bayou, Phase I-B (Frenchtown Rd. to Greenwell Springs Road)	Bridge and Earth Canal	2,180,000
7. Beaver Bayou, Phase II (Greenwell Springs Rd. to Wax Road)	Earth Canal	2,514,000
8. Beaver Bayou, Phase III (Wax Road to Hooper Road and West Lateral to Jackson Place Subdiv)	Earth Canal and Lined Canal	3,488,000
9. Boyd Avenue Culvert Ext. (North 22nd Street to Fuqua Street)	Closed Conduit	938,400
10. Broadmoor Laterals of North Branch Ward Creek (Three Laterals across Airline)	Closed Conduit	1,378,500
11. Brookstown Lateral of Hurricane Creek	Lined Canal and Closed Conduit	3,138,900

Table 24
(continued)

DESCRIPTION	IMPROVEMENTS	ESTIMATED COST
12. Brownsfield Lateral of Cypress Bayou (Cypress Bayou across Plank Road to Thomas Road)	Lined Canal and Earth Canal	1,060,350
13. Country Club Lateral	Closed Conduit	1,500,000
14. Dawson Creek (Hundred Oaks to Perkins)	Lined Canal	4,245,750
15. Dawson Creek (Ward Creek to Perkins)	Earth Canal	2,725,200
16. Draughn Creek	Earth Canal	1,458,300
17. Jefferson Place Laterals (Ward Creek to Jefferson Place)	Lined Canal & Closed Conduit	734,850
18. Jones Creek (Amite River to Lively Bayou Junction)	Earth Canal	3,583,800
19. Jones Creek (Lively Bayou to Lobdell)	Lined Canal	9,307,800
20. Lanier Lateral of Robert Canal	Lined Canal	1,611,600
21. Lavey Lane Lateral of White's Bayou (Plank Road to Lavey Lane)	Earth Canal	699,900
22. Lively Bayou (Jones Creek to Florida Blvd)	Lined Canal	5,714,250
23. Lively Bayou North of ICRR (ICRR Past Flannery Road)	Earth Canal	420,000
24. Maxine Drive Lateral of Dawson Creek (Rodney Drive to Maxine Drive)	New Culverts & Closed Conduit	78,000
25. Lateral of Monte Sano Bayou (Monte Sano Bayou to Central Road)	Lined Canal & Closed Canal	678,450

Table 24
(continued)

DESCRIPTION	IMPROVEMENTS	ESTIMATED COST
26. Normandy Branch of North Branch Ward Creek (N. Branch of Ward Creek to Present Lining)	Lined Canal	1,322,400
27. North Branch of Ward Creek (Ward Creek to Wooddale)	Lined Canal & Closed Conduit	8,437,800
28. North Branch of Ward Creek (Westminister Lateral)	Lined Canal	362,700
29. Northdale Canal	Lined Canal	1,113,450
30. Parkland Lateral of North Branch of Ward Creek	Lined Canal & Closed Conduit	585,900
31. Perkins Road Lateral of Dawson Creek (Dawson Creek to Perkins Road)	Closed Conduit	450,750
32. Red Oaks West Lateral of Jones Creek (Jones Creek to Choctaw Drive)	Lined Canal	1,208,850
33. Sharp Station Canal to Comite River	Earth Canal	244,950
34. Southdowns Lateral of Dawson Creek (Dawson Creek to Lee Drive)	Lined Canal & Closed Conduit	1,232,250
35. Ward Creek (Bayou Manchac to North Branch Ward Creek)	4,334,550	Earth Canal
36. Ward Creek (North Branch Ward Creek to City Limits)	Lined Canal	7,247,550
37. Weiner Creek Lateral of Jones Creek (Jones Creek to Airline)	Lined Canal	3,911.250

Table 24
(continued)

DESCRIPTION	IMPROVEMENTS	ESTIMATED COST
38. White's Bayou	Clean Out	303,150
39. Halfway Tree Road	Closed Conduit	75,000
Total Estimated Cost:		$89,408,480

SOURCE: 1989-1993 Capital Improvements Program,
Office of Planning Commission.

An examination of the project data indicates that approximately 2/3 of the proposed expenditures are planned for permanent improvements, consisting of concrete lined canals and conduits, while 1/3 is associated with the improvement of the waterway area of earthen canals. Almost one half the estimated expenditures for lined canals and conduits is allocated to the four largest projects located entirely within planning districts 9, 10 and 11.

The corresponding 4 largest earthen canal projects account for approximately $15 million (one-half) of that anticipated expenditure and should provide needed outfall drainage in the southeast part of the parish, primarily in the Bayou Fountain, Ward Creek, and Jones Creek watersheds.

Current City-Parish Drainage Improvement Projects

Records at the Dept. of Public Works indicate that 12 drainage projects are considered on-going or active at this time. The status of projects ranged from little more than a preliminary cost estimate available in some cases, to completed plans lacking funding and finally to projects recently completed. The following listing provides further details on specific projects:

- Aster Chimes Drainage Improvements

  Source of Funds: City-Parish

  Limits or Scope: South Stadium to Van Buren Lined Channel and Box Culverts

  Status: Not Funded

  Cost: $4,359,000.00

- Balis/Brownlee Area Drainage Improvements and Overlay

  Source of Funds: Community Development

  Limits or Scope: Balis - Ferret St. to I-10
  Balis - Rabey St. to I-10

  Status: Scope of Project has not been fully determined

  Cost: $20,000 *

  • Cost may be much higher

- Bayou Fountain at L.S.U. Campus Drainage Improvements

  Source of Funds: Louisiana State University

  Limits or Scope: 414 Feet of triple 5 Ft. x 4 Ft. Box Culvert

  Status: Not Funded

  Cost: $230,000.00

- Brownsfield Lateral of Cypress Bayou

  Source of Funds: Unknown

  Limits or Scope: 1600 Feet of Earthen Channel

  Status: Not Funded

  Cost: $722,000.00

- Beaver Bayou Drainage Improvements Phase I-A

  Source of Funds: State (70%); City-Parish (30%)

  Limits or Scope: Comite River to Frenchtown Road Earthen Channel

  Status: 100% Complete

  Cost: $820,000.00

- Beaver Bayou Drainage Improvements Phase I-B
  Source of Funds: State (70%); City-Parish (30%)
  Limits or Scope: Frenchtown Road to Greenwell Springs Road - Bridge and Earthen Channel
  Status: Project has been approved for funding
  Cost: $2,180,000.00

- Beaver Bayou Drainage Improvements - Phase II
  Source of Funds: State (70%); City-Parish (30%)
  Limits or Scope: Greenwell Springs Road to Wax Road - All Earthen Channel
  Status: Approved for funding
  Cost: $2,514,000.00

- Beaver Bayou Drainage Improvement Phase III
  Source of Funds: State (70%); City-Parish (30%)
  Limits or Scope: Wax Road to Hooper Road - Earthen and Lined Channel
  Status: Approved for funding
  Cost: $3,488,000.00

- Broadmoor Terrace Lateral of Jones Creek
  Source of Funds: City-Parish
  Limits or Scope: Sharp Road to Station 6+35 - Lined Channel
  Status: Unknown
  Cost: $72,500.00

- Country Club Lateral Drainage Improvements
  Source of Funds: State (70%); City-Parish (30%)
  Limits or Scope: Lateral of North Branch Ward's Creek from Stonesthrow Subdivision to Brandon Drive - All Closed Conduit
  Status: State has approved funding from North Branch to Stonesthrow.
  Waiting on City-Parish ($240,0000.00)
  Cost: $1,655,000,00

- <u>72nd Street Sidewalk and Drainage Improvements</u>
  <u>Source of Funds</u>: Community Development
  <u>Limits or Scope</u>: Scenic Highway to I-110 Overpass
  <u>Status</u>: 100% Complete
  <u>Cost</u>: $386,000.00

- <u>Sherwood Forest Lateral of Jones Creek, Phases VIII & IX</u>
  <u>Source of Funds</u>: Community Development (HUD)
  <u>Limits or Scope</u>: Mollylea Drive
  <u>Status</u>: 100% Complete
  <u>Cost</u>: $336,000.00

Project No.	Name/Limits
55-DR1-CI	HUNDRED OAKS DRAINAGE IMPROVEMENTS
55-DR2-CI	THIRD ST - LAUREL ST RELIEF STORM SEWER
58-1DR-CI	CAPITOL LAKE DREDGING
58-DR1-CI	LONGWOOD DR DRAINAGE OUTFALL TO WARDS CREEK
58-DR2-CI	KLEINERT -TERRACE DRAINAGE OUTFALL
58-DR3-CI	ALASKA ST DRAINAGE OUTFALL
60-1-DR-CI	RC CULVERT ACROSS OLD HAMMOND HWY OUTFALL DRAINAGE TO RIVER OAKS SUBD
60-2-DR-CI	AMITE RIVER LATERAL ACROSS OLD HAMMOND HWY JUST EAST OF O'NEAL RD
62-DR-1-CI	DAWSON CREEK CANAL LINING FROM HUNDRED OAKS TO 200' NORTH
62-DR-2-CI	BAYOU GRASSE PUMPING STATION @ FRONT ST

Project No.	Name/Limits
64-DR-2-CI	LATERAL JONES CREEK @ GOODWOOD BLVD
64-DR-3-CI	JONES CREEK @ WEST TAMS DR
64-DR-4-CI	WARDS CREEK @ FAIRFIELDS AVE
64-DR-5-CI	WARDS CREEK @ WASHINGTON AVE
64-DR-6-CI	DAWSON CREEK LATERAL @ VALLEY ST L & A RR TO PERKINS RD
64-DR1-CI	RCC BOX WARDS CREEK @ FLORIDA BLVD
65-DR-CI-0101	VICTORIA ST - WINBOURNE AVE DRAINAGE
65-DR-CI-0102	LIVELY BAYOU NEW HAMMOND HWY TO WINDSOR PLACE SUBD
65-DR-CI-0103	HUNDRED OAKS LATERAL OF WARDS CREEK
65-DR-CI-0104	BELMONT LATERAL OF HURRICANE CREEK

Project No.	Name/Limits
65-DR-CI-0105	WARD CREEK CLAYCUT TO GOVERNMENT
65-DR-CI-0106	CORPORATION CANAL CHIMES ST TO MYRTLE AVE
65-DR-CI-0107	CORPORATION CANAL
65-DR-CI-0108	CORPORATION CANAL
65-DR-CI-0109	LOBDELL BRANCH NORTH BRANCH WARDS CREEK TO BRENTWOOD
65-DR-CI-0110	NORTH BRANCH WARDS CREEK WARDS CREEK TO JEFFERSON HWY
65-DR-CI-0111	HOLLYWOOD LATERAL BEECHWOOD TO MONT.
65-DR-CI-0112	CHERRYDALE AVE
65-DR-CI-0113	KNOX CANAL
66-DR-CI-0101	BI P.D.#5 - LIVELY BAYOU LATERAL

Project No.	Name/Limits
66-DR-CI-0102	WARD CREEK
66-DR-CI-0103	WARD CREEK
66-DR-CI-0104	WARD CREEK
66-DR-CI-0105	BI #19 CD - CLAYCUT TO GOVERNMENT
66-DR-CI-0106	CHOCTAW TO ACADIAN
66-DR-CI-0107	CHOCTAW TO ACADIAN
66-DR-CI-0108	HOLLYWOOD LATERAL MONTE SANO BAYOU B.I. #CD-3
66-DR-CI-0109	NORMANDY LATERAL NORTH BRANCH WARD CREEK CITY LIMITS TO GOVERNMENT GOVERNMENT TO FLORIDA
66-DR-CI-0110	NORMANDY LATERAL NORTH BRANCH WARD CREEK CITY LIMITS TO GOVERNMENT GOVERNMENT TO FLORIDA
66-DR-CI-0111	BOYD AVE NORTH 16TH TO NORTH 22ND

Project No.	Name/Limits
66-DR-CI-0112	CLOUD CANAL WARDS CREEK TO FLORIDA BLVD
66-DR-CI-0113	BURGUNDY DR LATERAL OF WARDS CREEK
66-DR-CI-0114	LONGFELLOW DR EVANELINE ST TO GREENWELL ST
66-DR-CI-0115	WARDS CREEK LATERAL SOUTH OF CHOCTAW
66-DR-CI-0116	HURRICANE CREEK
66-DR-CI-0117	HURRICANE CREEK SOUTH OF SYCAMORE ST
66-DR-CI-0118	HURRICANE CREEK JOOR RD TO AIRLINE HWY
66-DR-CI-0119	CLAYCUT BAYOU JEFFERSON HWY TO AIRLINE HWY
66-DR-CI-0120	NORTHDALE CANAL CULVERTS
66-DR-CI-0121	WARDS CREEK ROSELAWN LATERAL

Project No.	Name/Limits
66-DR-CI-0122	MELROSE CANAL NORTH ST TO NORTH FOSTER
66-DR-CI-0123	LOBDELL LATERAL OF NORTH BRANCH WARDS CREEK
66-DR-CI-0124	LOBDELL LATERAL OF NORTH BRANCH WARDS CREEK
66-DR-CI-0125	CORPORATION CANAL LATERAL WEST OF TEXAS ST
66-DR-CI-0126	CLOUD CANAL CLOUD DR TO SEARS
66-DR-CI-0127	CORPORATION CANAL LATERAL EAST OF TEXAS ST
66-DR-CI-0128	BIRD STATION LATERAL OF HURRICANE CREEK
66-DR-CI-0129	MONTE SANO BAYOU HARDING BLVD TO ICRR
66-DR-CI-0130	MONTE SANO BAYOU ICRR TO BLOUNT RD
66-DR-CI-0131	HURRICANE CREEK LATERAL SOUTH OF PRESCOTT RD

Project No.	Name/Limits
66-DR-CI-0132	HURRICANE CREEK LATERAL SOUTH OF SHERWOOD ST
66-DR-CI-0133	MELROSE CANAL
66-DR-CI-0134	MELROSE CANAL
66-DR-CI-0135	LOBDELL BRANCH BRENTWOOD TO CITY LIMITS
67-DR-CI-0101	FAIRFIELDS DRAINAGE WARD CREEK TO ACADIAN
67-DR-CI-0102	FAIRFIELDS DRAINAGE PART WEST OF ACADIAN
67-DR-CI-0103	HURRICANE CREEK SOUTH OF MOHICAN TO NORTH 38TH
67-DR-CI-0104	DAWSON CREEK HUNDRED OAKS TO COLE
67-DR-CI-0105	HURRICANE CREEK LATERAL #CD12
67-DR-CI-0106	EATON ST DRAINAGE #CD13

Project No.	Name/Limits
67-DR-CI-0107	HOLLYWOOD LATERAL
67-DR-CI-0108	HURRICANE CREEK LATERAL CD#11
67-DR-CI-0109	DAWSON CREEK LATERAL CD#34
67-DR-CI-0110	HURRICANE CREEK ELM TO SCYMORE CD#6
67-DR-CI-0111	CLAYCUT BAYOU AIRLINE TO FLOYNELL
67-DR-CI-0112	LIVELY BAYOU FLORIDA BLVD TO ICRR
67-DR-CI-0113	COLLEGE TOWN DRAINAGE
67-DR-CI-0114	LATERAL OF BIRD STATION LATERAL OF HURRICANE CREEK CD#14
67-DR-CI-0115	HOLLYWOOD AIRLINE DRAINAGE
68-DR-CI-0101	FOREST OAKS - 5TH FILING - CANAL LINING COVER

Project No.	Name/Limits
69-DR-CI-0101	BON MARCHE CULVERT
69-DR-CI-0102	WEST JOHNSON BRIDGE @ CORPORATION CANAL
70-DR-CI-0101	INTERSTATE I-110 - WINBOURNE AREA OZARK ST TO WYANDOTTE ST
70-DR-CI-0102	WHITE BAYOU - BAKER CANAL DIVERSION (44+55) (80+50)
71-DR-CI-0101	WHITE BAYOU-BAKER CANAL DIVERSION (80+5 DEGREES)(141+0 DEGREES)
71-DR-CI-0102	WARD CREEK CITY LIMITS TO CLAYCUT RD
71-DR-CI-0103	ROBERT CANAL (EARTH)
71-DR-CI-0104	ROBERT CANAL (LINED)
71-DR-CI-0105	ROBERT CANAL (LINED)
71-DR-CI-0106	ROBERT CANAL (LATERALS)

Project No.	Name/Limits
71-DR-CI-0107	MONTE SANO BAYOU SCENIC TO AIRLINE
71-DR-CI-0108	BEECH - BEECHWOOD DRAINAGE
71-DR-CI-0109	TERRACE ST STORM PUMPING STATION
71-DR-CI-0110	WHITE BAYOU - BAKER CANAL DIVERSION (138+93 TO 194+39)
72-DR-CI-0101	CARROLLTON AVE DRAINAGE
72-DR-CI-0102	LATERAL NORTH BRANCH WARD CREEK NORTH OF GOODWOOD NEAR WOMAN'S HOSPITAL
72-DR-CI-0103	DAWSON CREEK LATERAL - NORTH OF CLAYCUT RD
72-DR-CI-0104	HURRICANE CREEK LATERAL - WEST OF BEECHWOOD
72-DR-CI-0105	SOUTH OF PRESCOTT LATERAL OF HURRICANE CREEK
72-DR-CI-0106	NORTH BRANCH OF WARD CREEK - THROUGH WESTMINSTER SUBD

Project No.	Name/Limits
73-DR-CI-0101	SOUTH 18TH ST DRAINAGE TERRACE ST SOUTH TO PARKING LOT
73-DR-CI-0101	SOUTH 18TH ST DRAINAGE TERRACE ST SOUTH TO PARKING LOT
73-DR-CI-0102	LSU CANAL CORPORATION CANAL TO HART COMPANY PARKING LOT
73-DR-CI-0103	BON MARCHE CANAL WEST OF LOBDELL AVE
73-DR-CI-0104	TERRACE ST PUMPING STATION EQUIPMENT PACKAGE A
73-DR-CI-0105	TERRACE ST PUMPING STATION EQUIPMENT PACKAGE B
73-DR-CI-0106	BIRD STATION BRANCH OF HURRICANE CREEK LATERALS ON THE EAST SIDE OF ELM ST OPPOSITE BRADLEY & JEAN STREETS
73-DR-CI-0107	WARD CREEK COLLEGE DR TO CITY LIMITS
73-DR-CI-0108	SOUTH LOCKSLEY DR BRIDGE OVER LIVELY BAYOU
73-DR-CI-0109	CORPORATION CANAL BRANCH NAPOLEON BETWEEN TERRACE & JULIA

Project No.	Name/Limits
73-DR-CI-0110	NORTH BRANCH WARD CREEK WESTMINISTER AREA - PHASE 2
73-DR-CI-0111	WARD CREEK RETAINING WALL REPAIR GIAMONCO'S (UNOFFICIAL)
74-DR-CI-0102	MONTE SANO BAYOU HARDING BLVD TO ROSENWALD RD
74-DR-CI-0103	LSU CANAL ALASKA ST TO EAST OF UNIVERSITY TERRACE ELEMENTARY SCHOOL
74-DR-CI-0104	IMPROVEMENTS TO EAST LATERAL OF CYPRESS BAYOU
74-DR-CI-0105	SPILLWAY @ GREENWOOD PARK LAKE
74-DR-MA-0101	CLEANOUT PORTION OF STORM DRAINAGE SYSTEM - CHOCTAW DR
75-DR-CI-0101	MALLARD - CORMORANT DRAINAGE FROM KINGFISHER TO SCENIC
75-DR-CI-0102	JONES CREEK EROSION REPAIR SHERWOOD FOREST PARK (11200 BLOCK OF WORTHINGTON)
75-DR-CI-0103	ROBERT CANAL PERIMETER DR TO HOOPER RD

Project No.	Name/Limits
75-DR-CI-0104	ROBERT CANAL LATERAL ROBERT CANAL TO GLEN OAKS DR
75-DR-CI-0105	LATERAL OF NORTH BRANCH OF WARD CRREK PINE PARK SUBD TO BLUEBONNETT
75-DR-CI-0106	LATERAL OF DAWSON CREEK (MALMAISON) DAGGETT TO DAWSON CREEK
75-DR-CI-0107	BANK REPAIR - LATERAL OF JONES CREEK SHERWOOD FOREST LATERAL
76-DR-CI-0101	BEECHWOOD LATERAL OF CYPRESS BAYOU
76-DR-CI-0102	SHERWOOD FOREST LATERAL OF JONES CREEK APPROXIMATELY 600' ALONG C. CLUB
76-DR-CI-0103	BELMONT-KENMORE STORM DRAINAGE RELIEF
76-DR-CI-0104	BEAVER BAYOU - COMITE RIVER PORT HUDSON RD TO GREENWELL SPRINGS
76-DR-CI-0105	WINTHROP AVE DRAINAGE RELIEF @ FINCHLEY
77-DR-CD-0101	WEST OF TEXAS LATERALOF CORP. CANAL ALICE TO LETTSWORTH

Project No.	Name/Limits
77-DR-CD-0102	SHERWOOD FOREST LATERAL OF JONES CREEK (PHASE III)
77-DR-CD-0103	BEAVER BAYOU - PHASE I
77-DR-CI-0104	COMITE RIVER BRIDGE @ COMITE DR
77-DR-CI-0105	ST. GERARD LATERAL OF BAYOU MONTE SANO (WIGGINS)
77-DR-CI-0107	EAST APPROACH REPAIRS COMITE RIVER BRIDGE @ DYER RD
77-DR-RS-0106	POLLARD ESTATES DRAINAGE DAHLIA TO DAWSON CREEK
78-DR-CD-0014	CALUMET - I-10 DRAINAGE
78-DR-CD-0015	WINNEBAGO - WYANDOTTE DRAINAGE
78-DR-CD-0016	ST. GERARD CIRCLE DRAINAGE
78-DR-CD-0017	PAULSON ST DRAINAGE

Project No.	Name/Limits
78-DR-CD-0018	SHERWOOD FOREST LATERAL OF JONES CREEK
78-DR-CD-0019	WEST MCKINLEY DRAINAGE MCKINLEY ST TO ROOSEVELT ST
78-DR-CD-0020	SHERWOOD FOREST OAKS LATERAL - LIVELY BAYOU
78-DR-CD-0065	ALASKA ST DRAINAGE LSU PARKING LOT TO HIGHLAND RD
78-DR-CI-0030	NORTH BRANCH WARD CREEK BANK REPAIR @ WESTMINISTER SUBD
78-DR-CI-0058	ACADIAN THRUWAY UNDERPASS PUMPING STATION
79-DR-CD-0001	ALASKA ST DRAINAGE (ACROSS LSU PARKING LOT)
79-DR-CD-0008	KNOX CANAL LATERAL WYANDOTTE TO MOHICAN
79-DR-CD-0009	NORTHDALE DRAINAGE IMPROVEMENTS
79-DR-CD-0011	SHERWOOD FOREST LATERAL OF JONES CREEK (ACROSS GOODWOOD)

Project No.	Name/Limits
79-DR-CD-0012	SHERWOOD FOREST OAKS LATERAL OF LIVELY BAYOU - PHASE II
79-DR-CD-0013	WOODLAWN LATERAL OF CLAYCUT BAYOU - PHASE I
79-DR-CI-0015	IMPROVEMENTS TO PUMPING STATION NO. 9
79-DR-CI-0039	CAPITOL LAKE PUMPING STATION
80-DR-CD-0001	ALASKA ST DRAINAGE EAST ALASKA ST - CORP CANAL
80-DR-CD-0005	WARDS CREEK LATERAL CHOCTAW DR TO SENECA ST
80-DR-CD-0006	SHERWOOD FOREST LATERAL @ JONES CREEK GOODWOOD BLVD-NORTH
80-DR-CD-0032	SHERWOOD FOREST OAKS LATERAL LIVELY BAYOU - PHASE III
81-DR-CD-0001	KNOX CANAL - PHASE II
~~81-DR-CD-0002~~	~~BIRD STATION LATERAL~~ NOT CONSTRUCTED

Project No.	Name/Limits
81-DR-CD-0003	WARD CREEK LATERAL - PHASE II
~~81-DR-CD-0006~~	~~ALASKA ST DRAINAGE~~ NOT CONSTRUCTED
81-DR-CD-0007	SHERWOOD FOREST LATERAL OF JONES CREEK
81-DR-CD-0008	HIGHLAND FARMS IMPROVEMENTS AVENUES AREA DRAINAGE
81-DR-CD-0009	SHERWOOD FOREST OAKS LATERAL OF LIVELY BAYOU
81-DR-CD-0010	SHENANDOAH LATERAL OF JONES CREEK
~~81-DR-CL-0016~~	~~BROWNSFIELD LATERAL OF CYPRESS BAYOU~~ NOT CONSTR.
~~82-DR- -0038~~	~~DRAINAGE IMPROVEMENTS FOR BAYOU FOUNTAIN~~ @ LSU CAMPUS NOT CONSTR.
82-DR-CD-0011	HIGHLAND FARMS DRAINAGE - PHASE II
82-DR-CD-0012	KNOX CANAL LATERAL - PHASE III

40

Project No.	Name/Limits
82-DR-CD-0013	SHERWOOD FOREST OAKS LATERAL OF LIVELY BAYOU
82-DR-CD-0014	SHERWOOD FOREST LATERAL OF JONES CREEK - PHASE VIII
82-DR-CD-0016	BROOKSTOWN LATERAL - PHASE I
82-DR-CD-0024	WOODLAWN LATERAL OF CLAYCUT BAYOU - PHASE II
82-DR-CD-0030	AMERICA ST DRAINAGE IMPROVEMENT BAXTER ST TO ST. ROSE AVE
82-DR-LA-0037	DRAINAGE IMPROVEMENTS FOR STATE POLICE DRAINAGE OUTFALL
82-DR-PW-0019	CLEANING OF VARIOUS DRAINAGE CHANNELS
83-DR-CD-0042	SHERWOOD FOREST LATERAL OF JONES CREEK - PHASE IX
83-DR-CD-0043	EVERGREEN ST DRAINAGE SPAIN ST TO NORTH BLVD
83-DR-CD-0044	SHENANDOAH LATERAL OF JONES CREEK - PHASE II

Project No.	Name/Limits
83-DR-CD-0049	CATFISH TOWN DRAINAGE & SEWER IMPROVEMENTS
83-DR-CD-0056	WOODS EDGE DRAINAGE EAST OF OAK MEADOW TO OAK TRAILS AVE
83-DR-CD-0057	ROBERTS CANAL LATERAL MAPLEWOOD DR - NORTH 800'
83-DR-CD-0064	HIGHLAND RD DRAINAGE IMPROVEMENTS
~~83-DR-CI-0020~~	~~EMERGENCY REPAIRS TO DYER RD BRIDGE~~ @ ~~COMITE RIVER~~ BRIDGE PROJ.
83-DR-LA-0004	BROWNSFIELD LATERAL DIVERSION
83-DR-RS-0040	WEIR MODIFICATIONS @ UNIVERSITY LAKE
~~84-DR-CD-0014~~	~~ASTER-CHIMES DRAINAGE IMPROVEMENTS~~ ALONG RR/LSU ~~TO VAN BUREN~~ NOT CONSTR.
84-DR-CD-0015	BROWNLEE ST DRAINAGE BAWELL ST TO DEAD END
~~84-DR-CD-0016~~	~~KANSAS ST PHASE II~~ ~~EAST WASHINGTON TO EAST HARRISON~~

Project No.	Name/Limits
84-DR-CI-0032	BANK REPAIR, DAWSON CREEK @ COLLEGE DR
84-DR-CI-0050	BANK STABILIZATION - NORTH BRANCH WARDS CREEK
84-DR-EP-0051	LAKE RESTORATION - BANK STABILIZATION PROJECT
85-DR-CD-0026	HIGHLAND FARMS DRAINAGE - PHASE III
~~85-DR-CD-0029~~	~~MONTE SANO BAYOU DRAINAGE~~ NOT CONSTR.
85-DR-CD-0033	BARBER ST DRAINAGE BAWELL ST TO I-10
85-DR-CI-0010	RIVER RD DRAINAGE IMPROVEMENT @ LA WAR MEMORIAL SITE
85-DR-CI-0012	EAST LAKESHORE DR STORM DRAIN IMPROVEMENTS
85-DR-CI-0023	REPAIR OF DRAINAGE OUTFALL @ DELMAR DR & SOUTH ALAMEDA DR
86-DR-CP-0001	CLEARING OF VARIOUS EARTH CHANNELS

Project No.	Name/Limits
~~87-DR-CD-0043~~	~~BROWNLEE/BALIS DRIVE DRAINAGE IMPROVEMENTS~~ NOT CONSTR.
87-DR-CP-0015	DRAINAGE IMPROVEMENTS FOR BRIARPLACE SUBD
87-DR-CP-0052	IMPROVEMENT TO BROADMOOR TERRACE LATERAL OF JONES CREEK
87-DR-CP-0056	BANK REPAIR OF WARD'S CREEK @ GOVERNMENT ST
87-DR-LA-0011	COUNTRY CLUB LATERAL BRENTWOOD DR TO BRANDON DR
88-DR-CP-0045	LOBDELL LATERAL OF NORTH BRANCH WARD CREEK DRAINAGE IMPROVEMENTS
88-DR-SP-0001	BEAVER BAYOU IMP. PHASE I-A FROM COMITE RIVER TO FRENCHTOWN RD
~~88-DR-SP-0002~~	~~BEAVER BAYOU IMP. PHASE I-B FROM FRENCHTOWN RD TO GREENWELL SPRINGS RD.~~ NOT CONSTR.
89-DR-CD-0032	BROWNLEE - BALIS DRAINAGE IMPROVEMENTS
~~89-DR-CP-0004~~	~~LOBDELL LATERAL OF NORTH BRANCH WARD CREEK DRAINAGE IMPROVEMENTS~~ NOT CONSTR.

Project No.	Name/Limits
90-DR-CD-0060	ZERLEE ST DRAINAGE
90-DR-CP-0067	DAWSON CREEK - CANAL LINING REPAIR @ HUNDRED OAKS AVENUE
~~91-DR-CP-~~0097	~~COMMUNITY COFFEE DRAINAGE PROBLEM~~ NOT CONSTR.
~~91-DR-CP-01~~00	BROADMOOR ~~AVE DRAINAGE~~ STUDY NOT CONSTR.
92-DR-CP-0001	DRAINAGE IMPROVEMENTS CONVENTION ST @ NORTH 7TH ST
92-DR-LF-0006	EBR PARISH NORTH LANDFILL BOX CULVERT

APPENDIX C

ENGINEERING INVESTIGATIONS

APPENDIX C - ENGINEERING INVESTIGATIONS

TABLE OF CONTENTS

Item	Page
SECTION 1 - HYDROLOGY AND HYDRAULICS	C-1
HYDROLOGY	C-1
DESCRIPTION OF STUDY AREA	C-1
CLIMATOLOGY	C-2
Climate	C-2
Temperature	C-2
Precipitation	C-2
Wind	C-4
STREAM GAGING DATA	C-4
FLOODS OF RECORD	C-7
HYDROLOGIC MODELING	C-8
GENERAL	C-8
FLOOD INSURANCE STUDIES	C-10
ADDITIONAL STUDIES	C-10
HYDRAULIC MODELING	C-12
GENERAL	C-12
GEOMETRIC DATA	C-12
STARTING WATER SURFACE ELEVATIONS	C-13
ROUGHNESS COEFFICIENTS	C-14
BRIDGE AND CULVERT ANALYSIS	C-14
WATERSHED ALTERNATIVE STUDIES	C-15
COMITE RIVER DIVERSION PROJECT	C-16
OVERFLOW MAPS	C-17
BAYOU MANCHAC	C-17
BAYOU FOUNTAIN	C-20
WARD CREEK AND TRIBUTARIES	C-29
CLAY CUT BAYOU	C-41
JONES CREEK AND TRIBUTARIES	C-44
BEAVER BAYOU	C-51
HURRICANE CREEK	C-57
BLACKWATER BAYOU	C-61
URBANIZATION	C-68
RISK AND UNCERTAINTY	C-69
MONITORING PROGRAM	C-69
SECTION 2 - SEDIMENTATION	C-73
GENERAL	C-73
DATA COLLECTION	C-73
EXISTING CONDITIONS	C-74
WITH PROJECT CONDITIONS	C-74
SECTION 3 - WATER QUALITY	C-77

WATER QUALITY STANDARDS AND CRITERIA	C-77
Applicable Louisiana State Standards	C-77
General water quality standards	C-77
Numerical water quality standards	C-79
EPA Water Quality Criteria	C-83
Additional EPA water quality criteria	C-87
EPA surface water quality criteria	C-88
EXISTING WATER QUALITY	C-89
General	C-89
Bacteriological	C-90
Agricultural And Industrial Chemicals	C-91
Trace Metals And Selected Trace Inorganics	C-92
Bottom Sediment	C-93
PROJECT IMPACTS	C-94
General	C-95
Elutriate Analysis	C-97
Conclusions	C-98
SECTION 4 - GEOLOGY	C-99
SECTION 5 - SOILS	C-103
GENERAL	C-103
CHANNEL DESIGN	C-103
Channel Slopes	C-103
Slope Protection	C-104
Bank Recession Rates	C-104
Cross Channel Flow	C-105
FUTURE INVESTIGATIONS	C-106
SECTION 6 - DESIGN	C-109
BAYOU FOUNTAIN WATERSHED	C-109
JONES CREEK WATERSHED	C-109
WARD CREEKWATERSHED	C-110
BEAVER BAYOU WATERSHED	C-111
BLACKWATER BAYOU WATERSHED	C-111
SLOPE PAVING	C-112
FIELD DATA COLLECTION	C-112
SECTION 7 - RELOCATIONS	C-113
GENERAL	C-113
AUTHORITY FOR ACCOMPLISHING RELOCATIONS	C-113
AFFECTED FACILITIES	C-113
Beaver Bayou	C-113
Blackwater Bayou	C-114
Bayou Fountain	C-115
Jones Creek	C-115

Ward Creek	C-115
PROCEDURE FOR ACCOMPLISHING RELOCATIONS	C-115
SECTION 8 - COST ESTIMATES	C-120
BASIS OF COST ESTIMATE	C-120
CONTINGENCIES	C-120

ANNEX 1 Water Quality Data

ANNEX 2 TSP Cost Estimate

ANNEX 3 Overflow Maps

3-1	Index Sheet
3-2	Blackwater Bayou
3-3	Blackwater Bayou
3-4	Blackwater Bayou
3-5	Blackwater Bayou
3-6	Blackwater Bayou and Beaver Bayou
3-7	Beaver Bayou
3-8	Blackwater Bayou
3-9	Blackwater Bayou and Beaver Bayou
3-10	Beaver Bayou
3-11	Blackwater Bayou
3-12	Blackwater Bayou
3-13	Beaver Bayou
3-14	Blackwater Bayou
3-15	Beaver Bayou
3-16	Beaver Bayou
3-17	Beaver Bayou
3-18	Ward Creek
3-19	Jones Creek
3-20	Jones Creek
3-21	Jones Creek
3-22	Jones Creek
3-23	Ward Creek and Dawson Creek
3-24	Ward Creek
3-25	North Branch Ward Creek
3-26	Jones Creek
3-27	Jones Creek
3-28	Bayou Duplantier
3-29	Dawson Creek
3-30	Ward Creek
3-31	North Branch Ward Creek
3-32	Jones Creek
3-33	Jones Creek
3-34	Jones Creek
3-35	Jones Creek
3-36	Bayou Fountain and Bayou Duplantier
3-37	Dawson Creek and Bayou Duplantier
3-38	Ward Creek, Dawson Creek and Bayou Duplantier
3-39	Clay Cut Bayou, Ward Creek and North Branch Ward Creek
3-40	Clay Cut Bayou and Ward Creek
3-41	Clay Cut Bayou
3-42	Jones Creek
3-43	Bayou Fountain
3-44	Bayou Fountain and Dawson Creek
3-45	Ward Creek and Dawson Creek

3-46 Clay Cut Bayou and Ward Creek
3-47 Clay Cut Bayou
3-48 Clay Cut Bayou
3-49 Clay Cut Bayou
3-50 Bayou Fountain
3-51 Bayou Fountain
3-52 Bayou Fountain and Ward Creek
3-53 Ward Creek
3-54 Ward Creek
3-55 Clay Cut Bayou
3-56 Clay Cut Bayou
3-57 Bayou Fountain
3-58 Bayou Fountain
3-59 Bayou Manchac and Bayou Fountain
3-60 Bayou Manchac and Ward Creek
3-61 Bayou Manchac
3-62 Bayou Manchac
3-63 Bayou Manchac
3-64 Bayou Manchac
3-65 Bayou Manchac and Bayou Fountain

LIST OF TABLES

Number		Page
C-1-1	Mean Monthly And Annual Temperature	C-2
C-1-2	Precipitation Stations	C-3
C-1-3	Monthly And Annual Precipitation	C-3
C-1-4	Average Precipitation	C-4
C-1-5	Average Monthly And Annual Wind Speeds	C-4
C-1-6	Major Stream Gaging Stations	C-5
C-1-7	USGS Partial-Record Stream Gages	C-6
C-1-8	EBRP Stream Discharge Sources	C-9
C-1-9	HEC-2 Model Information - Cross-Sections	C-13
C-1-10	Existing Conditions Stage Data	C-19
C-1-11	Existing Comditions Discharge Data	C-19
C-1-12	Existing Conditions Stages	C-21
C-1-13	Existing Conditions Discharges	C-21
C-1-14	Channel Improvement Alternatives	C-23
C-1-15	900 CFS Pumping Station - Project Stage Reductions	C-25
C-1-16	Floodgate Alternative - Project Stage Reductions	C-25
C-1-17	Ring Levee Alternatives - Design Data	C-28
C-1-18	TSP- 10-Yr Earthen Channel Design - Project Stage Reductions	C-29
C-1-19	Existing Conditions Stages	C-31
C-1-20	Existing Conditions Discharges	C-33
C-1-21	Channel Imporvement Alternatives	C-35
C-1-22	TSP - Project Stage Reductions	C-40
C-1-23	Existing Conditions Stages	C-42
C-1-24	Existing Conditions Discharges	C-43
C-1-25	EBRP FIS (1979) Data	C-45
C-1-26	Existing Conditions Stages	C-45
C-1-27	Existing Conditions Discharges	C-47
C-1-28	Channel Improvement Alternatives	C-48
C-1-29	TSP - Project Stage Reductions	C-50
C-1-30	Existing Conditions Stages	C-52
C-1-31	Existing Conditions Discharges	C-54
C-1-32	Channel Improvement Alternatives	C-55
C-1-33	TSP - Project Stage Reductions	C-57
C-1-34	Existing Conditions Stages	C-59
C-1-35	Existing Conditions Discharges	C-60
C-1-36	Existing Conditions Stages	C-62
C-1-37	Existing Conditions Discharges	C-63
C-1-38	Channel Improvement Alternatives	C-64
C-1-39	TSP - Project Stage Reductions	C-67
C-1-40	Effects Of Future Urbanization	C-68
C-1-41	Gaging Program Additions	C-70

C-3-1	1984 LDEQ Numerical Standards Applicable To Surface Waters In The Study Area	C-82
C-3-2	Louisiana Department Of Environmental Quality - 1984 Water Quality Criteria	C-83
C-3-3	1986 EPA Freshwater Aquatic Life Criteria	C-84
C-3-4	1986 EPA Human Health Criteria	C-85
C-7-1	Beaver Bayou Facility Listing	C-116
C-7-2	Blackwater Bayou Facility Listing	C-118
C-7-3	Bayou Fountain Facility Listing	C-119

LIST OF FIGURES

Number	Title	Page
C-1	Discharge – Frequency Confidence Limits – Jones Creek at Florida Blvd (US 190)	C-71
C-2	Stage – Discharge Uncertainty – Jones Creek at Florida Blvd (US 190)	C-72
C-3	Estimate of Bank Recession	C-107
C-4	Bank Loss Rate Curve	C-108

LIST OF PLATES

Number	Title
C-1	Meteorological and Hydrologic Stations
C-2	Bayou Manchac -- Stream Map
C-3	Bayou Fountain and Tributaries -- Stream and Recommended Plan Map
C-4	Ward Creek and Tributaries -- Stream and Recommended Plan Map
C-5	Clay Cut Bayou and Tributary -- Stream Map
C-6	Jones Creek and Tributaries -- Stream and Recommended Plan Map
C-7	Blackwater Bayou, Beaver Bayou and Tributaries -- Stream and Recommended Plans Map
C-8	Hurricane Creek and Tributary -- Stream Map
C-9	Bayou Manchac -- Existing Water Surface Profiles
C-10	Bayou Fountain -- 10-Yr Water Surface Profiles
C-11	Bayou Fountain -- 100-Yr Water Surface Profiles
C-12	Bayou Fountain - North Branch Tributary -- 10-Yr Water Surface Profiles
C-13	Bayou Fountain - North Branch Tributary -- 100-Yr Water Surface Profiles
C-14	Bayou Fountain - South Branch Tributary -- 10-Yr Water Surface Profiles
C-15	Bayou Fountain - South Branch Tributary -- 100-Yr Water Surface Profiles
C-16	Ward Creek -- 25-Yr Water Surface Profiles
C-17	Ward Creek -- 100-Yr Water Surface Profiles
C-18	Dawson Creek -- 25-Yr Water Surface Profiles
C-19	Dawson Creek -- 100-Yr Water Surface Profiles
C-20	Bayou Duplantier -- 25-Yr Water Surface Profiles
C-21	Bayou Duplantier -- 100-Yr Water Surface Profiles
C-22	North Branch Ward Creek -- 25-Yr Water Surface Profiles
C-23	North Branch Ward Creek -- 100-Yr Water Surface Profiles
C-24	Clay Cut Bayou -- Existing Water Surface Profiles
C-25	Jacks Bayou -- Existing Water Surface Profiles
C-26	Jones Creek -- 25-Yr Water Surface Profiles
C-27	Jones Creek -- 100-Yr Water Surface Profiles
C-28	Weiner Creek -- 25-Yr Water Surface Profiles
C-29	Weiner Creek -- 100-Yr Water Surface Profiles
C-30	Jones Creek Tributary -- 25-Yr Water Surface Profiles
C-31	Jones Creek Tributary -- 100-Yr Water Surface Profiles
C-32	Lively Bayou -- 25-Yr Water Surface Profiles
C-33	Lively Bayou -- 100-Yr Water Surface Profiles
C-34	Lively Bayou Tributary -- 25-Yr Water Surface Profiles
C-35	Lively Bayou Tributary -- 100-Yr Water Surface Profiles
C-36	Beaver Bayou -- 25-Yr Water Surface Profiles
C-37	Beaver Bayou -- 100-Yr Water Surface Profiles
C-38	Beaver Bayou Lateral -- 25-Yr Water Surface Profiles
C-39	Beaver Bayou Lateral -- 100-Yr Water Surface Profiles

C-40 Beaver Bayou Tributary -- 25-Yr Water Surface Profiles
C-41 Beaver Bayou Tributary -- 100-Yr Water Surface Profiles
C-42 Hurricane Creek -- Existing Water Surface Profiles
C-43 Roberts Canal -- Existing Water Surface Profiles
C-44 Blackwater Bayou -- 10-Yr Water Surface Profiles
C-45 Blackwater Bayou -- 100-Yr Water Surface Profiles
C-46 Blackwater Bayou Tributary No. 1 -- 10-Yr Water Surface Profiles
C-47 Blackwater Bayou Tributary No. 1 -- 100-Yr Water Surface Profiles
C-48 Blackwater Bayou Tributary No. 2 -- 10-Yr Water Surface Profiles
C-49 Blackwater Bayou Tributary No. 2 -- 100-Yr Water Surface Profiles
C-50 Bayou Manchac at Amite River -- Stage-Frequency Curve
C-51 Bayou Manchac at Ward Creek -- Stage-Frequency Curve
C-52 Bayou Manchac at Bayou Fountain -- Stage-Frequency Curve
C-53 Bayou Fountain at Gardere Lane -- Stage-Frequency Curves
C-54 Bayou Fountain at Ben Hur Road -- Stage-Frequency Curves
C-55 Ward Creek at Barringer Foreman Road -- Stage-Frequency Curves
C-56 Ward Creek at Siegen Lane -- Stage-Frequency Curves
C-57 Ward Creek at North Br. Ward Creek -- Stage-Frequency Curves
C-58 Ward Creek at Corporate Blvd -- Stage-Frequency Curves
C-59 Ward Creek at Government Street -- Stage-Frequency Curves
C-60 Dawson Creek at Bluebonnet Drive -- Stage-Frequency Curves
C-61 Dawson Creek at Moss Side Lane -- Stage-Frequency Curves
C-62 Bayou Duplantier at Lee Drive -- Stage-Frequency Curves
C-63 North Branch Ward Creek at I-12 -- Stage-Frequency Curves
C-64 North Branch Ward Creek at Old Hammond Hwy -- Stage-Frequency Curves
C-65 North Branch Ward Creek at Goodwood Blvd -- Stage-Frequency Curves
C-66 Clay Cut Bayou at Tiger Bend Road -- Stage-Frequency Curve
C-67 Clay Cut Bayou at Jacks Bayou -- Stage-Frequency Curve
C-68 Clay Cut Bayou at Bluebonnet Drive -- Stage-Frequency Curve
C-69 Jacks Bayou at Tiger Bend Road -- Stage-Frequency Curve
C-70 Jacks Bayou at Sherwood Forest Blvd -- Stage-Frequency Curve
C-71 Jones Creek at S. Harrell's Ferry Road -- Stage-Frequency Curves
C-72 Jones Creek at U.S. Highway 190 -- Stage-Frequency Curves
C-73 Jones Creek at Woodlake Blvd -- Stage-Frequency Curves
C-74 Weiner Creek at Stanley Aubin Lane -- Stage-Frequency Curves
C-75 Jones Creek Tributary at W. Tams Drive -- Stage-Frequency Curves
C-76 Lively Bayou at Old Hammond Highway -- Stage-Frequency Curves
C-77 Lively Bayou at Flannery Rd near Illinois Central RR -- Stage-Frequency Curves
C-78 Lively Bayou Tributary at U.S. Highway 190 -- Stage-Frequency Curves

C-79 Beaver Bayou at Greenwell Springs Road -- Stage-Frequency Curves
C-80 Beaver Bayou at Wax Road -- Stage-Frequency Curves
C-81 Beaver Bayou at Hooper Road -- Stage-Frequency Curves
C-82 Beaver Bayou at Denham Road -- Stage-Frequency Curves
C-83 Beaver Bayou Lateral at Devall Road -- Stage-Frequency Curves
C-84 Beaver Bayou Tributary No. 2 at Devall Road -- Stage-Frequency Curves
C-85 Hurricane Creek at Joor Road -- Stage-Frequency Curves
C-86 Hurricane Creek at Victoria Drive -- Stage-Frequency Curves
C-87 Robert Canal at Joor Road -- Stage-Frequency Curves
C-88 Robert Canal at Glen Oaks Drive -- Stage-Frequency Curves
C-89 Blackwater Bayou at Hooper Road -- Stage-Frequency Curves
C-90 Blackwater Bayou at Carey Road -- Stage-Frequency Curves
C-91 Blackwater Bayou at Blackwater Road -- Stage-Frequency Curves
C-92 Blackwater Bayou Tributary No. 1 at Gurney Road -- Stage-Frequency Curves
C-93 Blackwater Bayou Tributary No. 2 LA Highway 410 -- Stage-Frequency Curves
C-94 Eldred Lot Erosion White Oak Landing Lot 164 - General Borings
C-95 Claycut Bayou Improvement Airline Highway To Floynell Drive - General Borings
C-96 Claycut Bayou Improvement Airline Highway To Floynell Drive - General Borings
C-97 L.S.U. Canal City Parish Dept. Of Public Works - General Borings
C-98 Hurricane Creek Lateral Mohican Street To North 38th Street - General Borings
C-99 Ward Creek North 38th Street And Acadian Thruway - General Borings
C-100 Hurricane Creek Lateral - General Borings
C-101 Hurricane Creek East Brookstown Drive To Elm Street - General Borings
C-102 Robert Canal - General Borings
C-103 Ward Creek At Sandelwood - General Borings
C-104 Ward Creek Siegen Park Mall - General Borings
C-105 Generalized Surface Geology of Aite River Tributaries Study Area
C-106 Cross Section
C-107 Cross Section
C-108 Cross Section
C-109 Blackwater Bayou, Beaver Bayou and Tributaries, Relocations
C-110 Bayou Fountain, Relocations

AMITE RIVER AND TRIBUTARIES, LA
EAST BATON ROUGE PARISH STUDY
ENGINEERING INVESTIGATIONS APPENDIX

SECTION 1 - HYDROLOGY AND HYDRAULICS

HYDROLOGY

DESCRIPTION OF STUDY AREA

C.1.1. The Amite River Basin, located in southeastern Louisiana and southwestern Mississippi, has a total drainage area of approximately 2,200 square miles. The elevations in this watershed vary from 500 feet above National Geodetic Vertical Datum (NGVD) to 0 feet NGVD.

C.1.2. The source of the Amite River is in the southern part of Lincoln County, Mississippi, and it flows in a south and southeasterly direction a distance of 170 mile to the western side of Lake Maurepas in southeastern Louisiana. From its mouth there is a navigable connection through Lake Maurepas and Pass Manchac to Lake Pontchartrain. The head of navigation on the Amite River is at the mouth of Bayou Manchac, a right bank tributary at Mile 36. From this point to its mouth, the channel of the Amite River meanders through a heavily timbered swamp with little relief.

C.1.3. In the Amite River Basin, there are many rivers and streams that drain into the Amite River, all of which contribute flood flows. The primary tributary of the Amite River is the Comite River which has its origin in Wilkinson and Amite Counties, Mississippi. Approximately 348 square miles comprise the sub-basin drainage area for the Comite River. The Comite River is a right bank tributary, entering the Amite River below Denham Springs, Louisiana at Mile 55. The Comite River has numerous tributaries, the most significant are the right bank tributaries of Hurricane Creek, Cypress Bayou, and White Bayou which drain the upper portion of the city of Baton Rouge and its surrounding areas and the left bank tributaries of Beaver Bayou and Blackwater Bayou. In addition to the Comite River, other tributaries of the Amite River that contribute flooding flows include Jones Creek, Clay Cut Bayou, and Bayou Manchac and its tributaries. These tributaries drain the southern and southeastern regions of East Baton Rouge Parish.

C.1.4. The study area of this report is that portion of the Amite River watershed contiguous to East Baton Rouge Parish, LA. The study specifically addresses streams draining this area which either directly or indirectly drain into the Amite or Comite Rivers. This study does not address improvements along either the Comite River or Amite River.

Other studies, as part of the Amite River & Tributaries, LA studies, have previously addressed, or are addressing, potential flood reduction measures for these streams.

CLIMATOLOGY

Climate

C.1.5. The climate of the area is humid subtropical, but is subject to significant polar influences during winter, as cold air masses periodically move southward over the area displacing warm moist air. Prevailing southerly winds create a strong maritime character. This movement from the Gulf of Mexico helps to decrease the range between hot and cold temperatures and provides a source of abundant moisture and rainfall.

Temperature

C.1.6. Records of temperatures are available from "Climatological Data" for Louisiana, published by the National Climatic Center. The study area can be described by using the normal temperature data observed at Baton Rouge. This station is shown in Table C-1-1 with the monthly and annual minimum, maximum, and mean normals which are based on the period 1951-1980. The annual mean normal temperature is 67.5^{O}F, with monthly mean normals varying from 82.1^{O}F in July to 50.8^{O}F in January.

C.1.7 A maximum extreme temperature of 110^{O}F was recorded at Baton Rouge during August 1909 and a minimum extreme of 8^{O}F was recorded during December 1989.

TABLE C-1-1
BATON ROUGE
MAXIMUM, MINIMUM, and MEAN MONTHLY TEMPERATURE (^{O}F)
30 Year Normals (1951-1980)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
MAXIMUM	61.1	64.5	71.6	79.2	85.2	90.6	91.4	90.8	87.4	80.1	70.1	63.8	78.00
MINIMUM	40.5	42.7	49.4	51.5	64.3	70.0	72.8	72.0	68.3	56.3	47.2	42.3	57.00
MEAN	50.8	53.6	60.5	68.4	74.8	80.3	82.1	81.4	77.9	68.2	58.7	53.1	67.50

Source: National Climatic Center

Precipitation

C.1.8 Records of precipitation are also available in publications by the National Climatic Center. Eight stations were used to show the

rainfall data for the study area (these stations are shown on plate C-1). Table C-1-2 gives a list of the stations with their period of record, and available extremes. Baton Rouge Airport is the only station with precipitation normals. The annual normal rainfall for Baton Rouge is 55.8 inches based over the period 1951-1980. Table C-1-3 lists the monthly and annual normals. The wettest month is July with an average monthly normal of 7.07 inches. October is the driest month averaging 2.63 inches. The average annual rainfall since 1980 is 65.51 inches. This average accounts for all eight stations. This twelve year average is shown in Table C-1-4 with the monthly and annual averages of each station.

TABLE C-1-2
PRECIPITATION STATIONS

Station	Map No. Plate C-3	Period of Record (to 1991)	Maximum Monthly (in.)	Date	Minimum Monthly (in.)	Date	Greatest 1-Day (in.)	Date
Baker	1	1980-Date	22.62	6/89	1.10	11/81	6.2	12/4/82
Baton Rouge Airport	2	1930-Date	23.18a	6/89	T	10/78	11.99	4/14/67
Baton Rouge Central	3	1980-Date	19.29	8/83	1.00	11/85	13.5	8/2/83
Baton Rouge Sherwood	4	1979-Date	21.67	8/83	0.44	11/85	14.43	8/2/83
Denham Springs	5	1978-Date	19.24	8/83	T	10/78	13.8	8/2/83
Greenwell Springs	6	1967-Date	17.05	4/80	0.11	6/79	11.42	8/2/83
LSU Ben Hur	7	1963-Date	21.26	6/89	0.0	10/78 a	8.13	10/4/64
Zachary	8	1975-Date	21.53	6/89	T	10/78	6.58	4/6/83

a And other dates
T Trace
Source: National Climatic Center

TABLE C-1-3
BATON ROUGE AIRPORT
MONTHLY AND ANNUAL NORMAL PRECIPITATION (inches)
(1951-1980)

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
4.58	4.97	4.59	5.59	4.82	3.11	7.07	5.05	4.42	2.63	3.95	4.99	55.77

Source: National Climatic Center

TABLE C-1-4
Average Precipitation(inches)
(1980-1991)

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Baker	5.65	6.29	4.85	5.12	5.70	6.63	4.23	5.13	5.14	5.17	4.43	6.28	64.82
Baton Rouge Airport	5.04	6.30	4.58	5.16	5.90	6.88	5.78	6.75	4.61	4.52	4.27	5.99	65.78
Baton Rouge Central	5.51	6.31	5.29	5.83	6.06	5.99	5.15	7.30	4.05	4.46	4.98	6.01	66.89
Baton Rouge Sherwood	5.04	6.33	5.49	4.99	5.77	6.43	4.80	7.90	4.37	4.70	4.19	5.24	65.25
Denham Springs	4.85	6.19	5.63	5.14	5.68	6.64	5.73	7.49	3.51	4.69	3.88	5.04	64.90
Greenwell Springs	5.46	6.55	5.67	5.78	6.08	7.00	4.61	6.75	4.41	4.85	4.78	5.90	67.84
LSU Ben Hur	4.88	6.25	4.79	4.44	4.57	7.65	4.64	5.84	4.26	3.99	4.21	5.34	61.68
Zachary	5.02	6.43	5.08	5.32	6.28	6.59	4.62	5.99	4.34	5.34	3.95	6.10	66.93
AVERAGE	5.18	6.33	5.17	5.22	5.76	6.73	4.95	6.64	4.34	4.72	4.34	5.74	65.51

Source: National Climatic Center

Wind

C.1.9 The average velocity of winds in the study area is 7.3 mph. This is based on 19 years of record (1973-1991) taken at Baton Rouge at Ryan Airport. Prevailing wind flow is from a southerly direction during much of the year. The maximum wind speed observed at this station since 1963 was 58 mph during September 1965 and was caused by Hurricane Betsy. Table C-1-5 gives the average monthly and annual wind speeds for Baton Rouge.

TABLE C-1-5
AVERAGE MONTHLY AND ANNUAL WIND SPEEDS
1973 - 1991 (MPH)
BATON ROUGE AT RYAN AIRPORT

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
AVG	8.3	8.8	9.0	8.4	7.5	6.4	5.7	5.3	6.4	6.5	7.5	8.0	7.3

STREAM GAGING DATA

C.1.10. Stream gaging data are available from twelve major gaging stations in the study area. Many of these stations are maintained

C.1.10. Stream gaging data are available from twelve major gaging stations in the study area. Many of these stations are maintained through cooperative agreement between the U.S. Army Corps of Engineers and the U.S. Geological Survey. Maximum records were set at 7 of the 12 stations in the study area from the April 1983 flood. The stations with their maximum and minimum stages and discharges are shown in Table C-1-6 and on Plate C-1. In addition to these gages, 31 USGS partial-record stations were used in the study analysis. Table C-1-7 is a list of the stations. The station locations are shown on the individual watershed plates (Plates C-2 to C-8).

TABLE C-1-6
MAJOR STREAM GAGING STATIONS

MAP NO.	STATION	PERIOD OF RECORD	MAXIMUM STAGE FT (NGVD)	MAXIMUM STAGE DATE	MAXIMUM DISCHARGE CFS	MAXIMUM DISCHARGE DATE	MINIMUM STAGE FT (NGVD)	MINIMUM STAGE DATE	MINIMUM DISCHARGE CFS	MINIMUM DISCHARGE DATE
1	AMITE RIVER									
	@ PORT	1954-89	14.59	4/83			-1.60	12/54		
	VINCENT	1984-90			69,500	1/90			0	d
2	AMITE RIVER									
	NR DENHAM	1938-89	41.50	4/83			8.43	11/38		
	SPRINGS	1938-90a			112,000	4/83			271	10/56
3	COMITE RIVER									
	NR COMITE	1944-90a	54.49	5/53	37,000	4/83	-	-	28	8/77
4	COMITE RIVER									
	@ GREENWELL									
	SPRINGS	1962-90a	49.42	4/83	-	-	-	-	-	-
5	COMITE RIVER									
	NR BAKER	1965-89	73.34	6/67	b	-	b	-	-	-
6	WHITE BAYOU	1965-89	88.24	4/83			2.29	10/89		
	SE ZACHARY	1965-90a			4,730	4/83			0	d
7	WHITE BAYOU									
	EAST DIVERSION									
	NR BATON ROUGE	1965-90a	81.08	4/77	1,660	4/83	3.06	11/82	0	b
8	ALLIGATOR BAYOU									
	@ SPANISH LAKE									
	FLOODGATE	1955-73								
	UPPER	1974-89	10.66	4/80	-	-	-0.40	7/64	-	-
9	ALLIGATOR BAYOU									
	@ SPANISH LAKE									
	FLOODGATE									
	LOWER	1955-89	15.71	4/83	-	-	-2.42	4/60	-	-
10	BAYOU MANCHAC									
	@ HOPE VILLA	1945-58								
		1960-89	15.60c	4/83	-	-	-1.63	12/54	-	-
11	BAYOU MANCHAC									
	NR PORT									
	VINCENT	1972-88	18.85	4/83	-	-	-	-	-	-
12	MISSISSIPPI RIVER									
	@ BATON ROUGE	1872-88								
		1931-45								
		1947-56	47.28	5/27	1,473,000	4/45	-0.07	11/94	73,700	10/39

a Discharge and/or stage observations from USGS
b Dry on several occasions
c From incomplete record
d No flow at times - Not Available
Source: U.S. Geological Survey Water-Date Report LA-90

TABLE C-1-7
USGS PARTIAL-RECORD STREAM GAGES

MAP#	STREAM	LOCATION	TYPE OF RECORD	PERIOD OF RECORD
	BAYOU FOUNTAIN			
BF1		@ Ben Hur Road	Flood Peak Stage	1962-Date
BF2		@ Gardere Lane	Flood Peak Stage	1962-66&1967-Date
BF3		Tributary nr Baton Rouge	Flood Peak Stage	1967-Date
	CLAY CUT BAYOU			
CC1		@ Tiger Bend Road	Flood Peak Stage	1966-Date
CC2		@ Siegen Lane	Flood Peak Stage	1966-Date
	JONES CREEK			
JC1		@ Jones Creek Road	Flood Peak Stage	1966-Date
JC2		@ Old Hammond Hwy.	Flood Peak Stage	1962-Date
JC3		@ Florida Blvd.	Flood Peak Stage	1962-Date
JC4		@ Airline Hwy.	Flood Peak Stage	1966-Date
	WEINER CREEK			
WE1		@ Aubin Lane	Flood Peak Stage	1966-Date
	LIVELY BAYOU-FLANNERY ROAD			
LB1		@ Mile 0.8	Flood Peak Stage	1966-Date
LB2		@ Mile 2.3	Flood Peak Stage	1966-Date
LB3		@ Mile 3.2	Flood Peak Stage	1966-Date
	WARD CREEK			
WC1		@ Siegen Lane	Continuous Stage	1947-53&72-Date a
			Flood Peak Stage	1955-68 b
WC2		@ Essen Lane	Flood Peak Stage	1962-Date
WC3		@ College Drive	Flood Peak Stage	1966-Date
WC4		@ Government Street	Continuous Stage	1954-67&75-Date a
			Flood Peak Stage	1969-73 c
	NORTH BRANCH WARD CREEK			
NB1		@ Jefferson Hwy.	Flood Peak Stage	1962-Date
NB2		@ Goodwood Blvd.	Flood Peak Stage	1966-Date
	DAWSON CREEK			
DC1		@ Perkins Road	Flood Peak Stage	1966-Date
DC2		@ Staring Lane	Flood Peak Stage	1966-Date
	BAYOU DUPLANTIER			
BD1		@ Lee Drive	Flood Peak Stage	1962-Date
	HURRICANE CREEK			
HC1		@ Joor Road	Flood Peak Stage	1962-Date
HC2		@ E. Brookstown	Flood Peak Stage	1966-Date
	ROBERT CANAL			
RC1		@ Joor Road	Flood Peak Stage	1962-Date
RC2		@ Silverleaf Avenue	Flood Peak Stage	1966-Date
	BEAVER BAYOU			
BB1		@ Wax Road	Flood Peak Stage	1972-Date
BB2		@ Hooper Road	Flood Peak Stage	1983-Date
BB3		@ Denham Road	Flood Peak Stage	1972-Date
	BLACKWATER BAYOU			
BL1		@ Hooper Road	Flood Peak Stage	1967-Date
BL2		@ Dyer Road	Flood Peak Stage	1962-Date

a Operated as a continuous-record gaging station
b Operated as a continuous-record gaging station, daily records unpublished
c Operated as a crest-stage partial-record station
d Map # refers to gages on Plates C-2 to C-8
Source: U.S. Geological Survey Water-Date Report LA-91

FLOODS OF RECORDS

C.1.11. The low-lying areas along the Amite and Comite River systems have experienced flooding during periods of heavy local rainfall. Flood problems within the basin are caused by the excessive rainfall that results in headwater and backwater overflow of the Amite River and its tributaries.

C.1.12. Significant floods have occurred in the area in 1921, 1928, 1942, 1947, 1953, 1957, 1962, 1964, 1967, 1973, 1977, 1979, 1983, 1989, and 1990. Over the span of these years, the Baton Rouge metropolitan area and other communities expanded further into the Amite River Basin floodplain to accommodate growing populations, thus the potential for more flood damages. The 1983 flood was the flood of record. Flood stages reached the highest level at 7 recorded locations in the area. A summary of selected floods is given below.

C.1.13. 1953 Flood The flood of May 1953 was caused by unusually heavy rains beginning on 27 April. During the period 22 April-9 May 1953 heavy rainfall produced generally high stages on most streams in the area and creared favorable conditions for additional flooding following a second storm period between 10-21 May 1953. During the second storm period rainfall in the area ranged from 17.5 inches at New Roads to 7.0 inches at Baton Rouge. The average rainfall for the total storm period 22 April-21 May over the area was about 18 inches. Amite River near Denham Springs had a maximum stage of 36.37 ft. NGVD for this flood.

C.1.14. 1962 Flood. The flood of April 1962 was caused by unusually heavy rains during the period 27-28 April 1962. Rainfall ranged from 4.0 inches at New Roads to 7.0 inches at Baton Rouge. The flood overflowed an area in excess of 114,000 acres along several streams in the basin.

C.1.15. 1973 Flood. Headwater flooding occurred throughout the study area during the spring of 1973. During the period 23-25 March 1973, 7.3 and 7.7 inches of rainfall were recorded at Baton Rouge, and Greenwell Springs, respectively. Many streams overflowed their banks flooding adjoining areas.

C.1.16. 1977 Flood. Record flooding occurred in the Amite River Basin during the period 20-26 April. Rainfall amounts over this period ranged up to 15 inches with many reports of 6-13 inches. From 4-8 feet of flooding occurred along the Comite River with the maximum stage of 51.37 feet, NGVD at Comite gage exceeding the I973 record by 5.94 feet. Up to 12 feet of flooding occurred along the Amite River where the 41.08 feet, NGVD, maximum stage at Denham Springs exceeded 1973's record by 4.6 feet. A new record occurred upstream at Darlington on the Amite River where the gage height peaked at 21.76.

C.1.17. 1979 Flood. The 1979 flood was caused by headwater flooding on the Amite River and Tributaries and inadequate drainage facilities in the study area. High stages occurring along the Amite and New Rivers produced substantial flooding in and around Baker, Baton Rouge, Denham Springs, French Settlement, Gonzales, Port Vincent, Sorrento and Zachary. Maximum stage at Denham Springs was 36.36 feet NGVD.

C.1.18. 1983 Floods. Heavy rains produced floods in April and August of 1983. During 5-8 April, severe thunderstorms produced more than 10 inches of rain over the study area. Amite received nearly 9 inches on 6 April. Maximum stage records were exceeded at 9 gages. The record at Denham Springs was 41.5 feet NGVD which exceeded the 1977 flood record of 41.08 feet NGVD. Flash flooding occurred on 2 August in portions of the Baton Rouge and Vicinity when a weak tropical wave moved slowly over the area producing 24 hour rainfall amounts of 12-15 inches. Baton Rouge Sherwood (Woodlawn) and Denham Springs received 14.43 inches and 13.8 inches, respectively.

C.1.19. 1989 Flood. Heavy rain from Tropical Storm Allison accounted for this flood. Seven to ten inches of rain fell in a twelve hour period over east-central Louisiana during 27-28 June. Baton Rouge recorded a 24-hour rainfall total of 9.7 inches. Stages of Bayou Fountain were nearly two feet higher than those set in the 1983 flood.

C.1.20. 1990 Flood. A cold front passage on 24-25 January, and the squall line ahead of the front, generated heavy rains and localized flooding over the study area. The most extensive flooding occurred to the east of Baton Rouge. Flooding was reported on the Amite and Comite Rivers. The two-day storm rainfall ranged from 4-6 inches. Antecedent conditions, with saturated soils and elevated water tables, intensified flooding problems. Stages approached those of the 1983 flood.

C.1.21. 1991 Flood. Several periods of flooding occurred throughout the year due to record-breaking rainfall all over the state. With the ground very saturated, any rainstorm was capable of producing a significant flood. Some examples of flooding in the study area include the 20 February storm, in which nearly 4 inches of rain fell and raised the stage in the Comite River at Comite nearly 17 feet, the 2 May storm produced 3 to 5 inches in Zachary and Baker and flooded about a dozen homes, and on 23 October, Denham Springs received 8 inches of rain as this storm caused localized flooding across a large portion of East Baton Rouge and Livingston Parishes.

HYDROLOGIC MODELING

GENERAL

C.1.22. Discharges for the majority of the streams studied were obtained from Flood Plain Information (FPI) publications and the East

Baton Rouge Parish Flood Insurance studies (FIS) of 1979 and 1983. Other methods were used for the remaining streams either because no data was available or because of the detail required. Table C-1-8 lists the streams studied and the source of discharge data.

TABLE C-1-8
EBRP STREAM DISCHARGE SOURCES

STREAM	SOURCE OF DISCHARGES FPI	'83 FIS	'79 FIS
Amite River Tributaries			
Bayou Manchac		X	
Bayou Fountain	X		X X
Ward Creek	X	X	
Dawson Creek	X	X	
Bayou Duplantier	X	X	
North Branch Ward Creek	X		X
Clay Cut Bayou	X		X
Jacks Bayou	X		
Jones Creek	X		X
Weiner Creek	X		
Lively Bayou	X		X
Lively Bayou Tributary	X		
Jones Creek Tributary	X		X
Comite River Tributaries			
Beaver Bayou		X	
Beaver Bayou Lateral		X	
Beaver Bayou Tributary		X	
Blackwater Bayou			X X
Tributary No. 1		X	
Tributary No. 2		X	
Hurricane Creek	X		X X
Roberts Canal		X	

C.1.23. The U.S. Army Corps of Engineers conducted a Flood Insurance Study of East Baton Rouge Parish, Louisiana (Baton Rouge and vicinity) in January 1979. This was done to aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This report was updated with the November 1983 East Baton Rouge Parish FIS.

C.1.24. In 1971, 1972, 1974 and 1976, the U.S. Army Corps of Engineers prepared Flood Plain Information Reports 1, 2, 3, and 4, respectively. These reports were prepared at the request of the City Parish Council of East Baton Rouge Parish and the Capital Region Planning Commission through the State of Louisiana, Department of Public Works. Its purpose was to identify the 100-year and 500-year floodplains.

C.1.25. Bayou Manchac, Bayou Fountain, Blackwater Bayou and Hurricane Creek each required additional study for the following reasons. Bayou Manchac was not included in the FPI or FIS studies mentioned above. Pump stations and/or floodgates were considered as alternatives on Bayou Fountain requiring development of a HEC-1 model for the basin. The Blackwater Bayou FIS only extends as far as Blackwater Road. Hurricane Creek was studied in detail in the Amite River and Tributaries Feasibility Study.

FLOOD INSURANCE STUDIES

C.1.26. Unit hydrographs were computed using Technical Report 2B prepared by U.S.G.S. in cooperation with the Louisiana Department of Public Works. This method uses regression equations, based on drainage area and basin length to centroid and a dimensionless unit hydrograph derived in a 1967 study by the U.S.G.S. and the State of Louisiana. The study used site data computed at 17 gaging stations located in Southeast Louisiana and Southern Mississippi. For each station a unit hydrograph and base-flow recession were computed. Also computed are physical parameters of the basin, namely, basin size, length, and mean length. Through mathematical manipulations each unit hydrograph was changed into a dimensionless form. This group of unit hydrographs, reduced to dimensionless form, were averaged into one dimensionless hydrograph being representative of all. This regionalized storm hydrograph was used with generalized intensity and duration data of selected storms found in National Weather Services Technical Paper 40 to develop synthetical storm hydrographs. In most cases, discharges were developed for the 10-, 50-, 100-, and 500-year events. Discharge vs. Percent Exceedence curves were drawn and extrapolated to include the 1- to 10-year events.

C.1.27. The FPI reports analyzed the Intermediate Regional Flood, which was then defined as the 100-year event; and the Standard Project Flood which was now assumed to be the 500-year event. Peak flows were developed from generalized rainfall-frequency data and runoff patterns of streams in the "general region" of the study area. These frequency curves of peak flow reflect the judgement of engineers who have studied the area and are familiar with the region. The FPI reports states that these discharges must be regarded as approximate and should be used cautiously in connection with any flood plain planning purposes. For this reason, discharges developed for the FIS reports were used where ever possible.

ADDITIONAL STUDIES

C.1.28. Bayou Manchac is unique in comparison to the other streams. Backwater effects from the Amite River extend the full length of Bayou Manchac. Predominate flood stages along Bayou Manchac are therefore

produced by flood events on the Amite River. The Amite River and Tributaries, Comite River Basin, Feasibility Study (January 1990) developed a stage-frequency curve at the mouth of Bayou Manchac on Amite River. Stage-frequency curves were also developed at Hope Villa And Alligator Bayou at Spanish Lake Floodgates using stage data and Beard's plotting positions. This will be discussed in detail in the "Hydraulic Modeling" section. Standard step backwater computations were made using the computer program HEC-2. The model extends from Hope Villa to the mouth. Discharges, for each frequency event were varied and ran through the HEC-2 model to determine the discharge that produced the corresponding stage at the mouth.

C.1.29. As an alternative to channel improvement on Bayou Fountain, a floodgate and pumping station were studied. To adequately analyze this alternative, a hydrologic model of the watershed was developed. This was done by use of the rainfall/runoff model HEC-1 that was developed by the U.S. Army Corps of Engineers. A complete description of the computer model, including data requirements, limitations, and examples of applications are given in the HEC-1 Users Manual (U.S. Army Corps of Engineers, 1987).

C.1.30. The principal steps in application of HEC-1 are design of a system network for simulation, estimation of model parameters, estimation of design rainfall and simulation of flood flows. These steps were accomplished as follows:

1. System Network. For simulation the each watershed was divided into sub-areas which were planimetered to determine area.

2. Rainfall Data. Hypothetical precipitation values were developed, using National Weather Service Hydro 35 and Technical Paper 40. Point rainfall reduction was set to basin area.

3. Base Flow. Base flow which results from releases of water from subsurface storage was estimated using Technical Report 2B. The value of Q at the recession threshold and base flow recession values were obtained from TR-2B pages 11 and 12.

4. Loss Rates. Rainfall loss rates were computed using the Soil Conservation Service curve number method. Curve numbers were determined using as SCS report on east Baton Rouge Parish and land use patterns.

5. Flood Routing. The attenuation of the flood wave along the stream was done by using the Modified Puls method. Storage volumes were determined using a previously developed HEC-2 model.

6. Reservoir Routing. Level-pool reservoir routing was used at the pump station to model flows through the sump pool. A reservoir storage volume vs. elevation relationship was developed using the conic

method. A minimum depth of 5.0 feet was assumed to be maintained in the sump pool during low flow periods.

7. Unit Hydrographs. Unit hydrographs were developed using TR-2B (same as with the FIS reports) and the unit hydrographs were input directly.

The model was calibrated to produce discharges similar to those developed in the FIS.

C.1.31. The Flood insurance Study of Blackwater Bayou extends from its mouth at Comite River to Blackwater Road. It was desired to study Blackwater Bayou upstream as far as Greenwell Springs Road. Area-discharge relationships were developed based on planimetered areas and FIS discharges. Based on this relationship, upstream sub-areas were planimetered and discharges determined.

C.1.32. A detailed HEC-1 analysis of Hurricane Creek was performed for the Amite River and Tributaries, Comite River Basin Feasibility Report (January 1990). The Hurricane Creek watershed was developed for the 1- through 500-year events. The HEC-1 model utilized initial uniform loss rates, TR-2B unit hydrographs and Muskingham routing technique.

HYDRAULIC MODELING

GENERAL

C.1.33. The computer model HEC-2 was used to simulate the hydraulic response of the watershed. The HEC-2 program was developed by the U.S. Army Corps of Engineers. It utilizes a computational procedure generally known as the Standard Step Method to calculate water surface elevations using defined cross-sections by iterative solution of the one-dimensional energy equation with energy loss due to friction based on Manning's equation. A complete description of this model, including data requirements, limitations, options, and examples of applications are given in the HEC-2 Users Manual (U.S. Army Corps of Engineers, 1982).

GEOMETRIC DATA

C.1.34. Separate hydraulic models were developed for each stream studied. Survey cross-sections for the computer models were either taken from the Amite River and Tributaries, Comite River Basin Feasibility Study (January 1990) or the East Baton Rouge Parish Flood Insurance Study (November 1985). Cross-sections for the Comite River Basin were taken in 1985 and 1986. Table 2 shows the streams studied, source of cross-sections, number of cross-sections, type of

cross-section (natural stream or bridge), and stream length studied. Bridges and culverts were modeled using both normal and special bridge routines available in HEC-2.

C.1.35. Cross-sections were located at most bridges and culverts and at tributary junctions. Overbanks were extended using 1:24,000 USGS quadrangle maps with 5-foot contours.

TABLE C-1-9
HEC-2 MODEL INFORMATION
CROSS-SECTIONS

Stream & Trib.	AR&T Natural	AR&T Bridge	FIS Natural	FIS Bridge	Extends From Mouth to:	Approx. Length (mi)
Amite River						
Bayou Manchac	15	5			B. Fountain	7.5
Ward Creek	4	11		12	Choctaw Dr.	14.5
Dawson Cr.		11	1	10	Cole Drive	8.0
B. Duplantier	1		3	5	Darymple Dr.	3.5
N. Br. Ward Cr.		7			Airport Ave.	4.5
Bayou Fountain	7	8			Highway 42	12.0
Clay Cut Bayou	4	13			Bluebonnet Dr.	10.0
Jacks Bayou		4			Sherwood Forest Blvd.	2.0
Jones Creek	4	17			Lobdell Blvd.	12.0
Weiner Creek	1	4			Cedar Crest Ave	2.0
Lively Bayou		7			IL Central RR	4.0
Lively B. Trib.		4			Tams Drive	2.0
Jones Cr. Trib.		3			Darryl Drive	1.0
Comite River						
Beaver Bayou			10	6	Hubbs Road	8.5
Beaver B. Lateral			4	2	Near Puckett	1.5
Beaver B. Trib.	3	3	5	1	Near Core Lane	2.0
Hurricane Creek	2		1	10	Shelly Street	7.0
Roberts Canal	1	7	1	9	Glen Oaks Dr.	4.5
Blackwater Bayou			4	2	Greenwell Springs Road	9.0
Tributary #1			4	2	McCullough Road	4.5
Tributary #2			4	2	Near Dyer Road	2.0

STARTING WATER SURFACE ELEVATIONS

C.1.36. Water surface profiles were developed for the existing and with-project Comite River Diversion (authorized Nov 92) conditions for the Amite and Comite Rivers for the "Amite River and Tributaries, Comite River Basin Feasibility Study" (January 1990). This provided starting water surface elevations for all tributary streams. Because of the uniqueness of Bayou Manchac, flowlines were developed by stage-frequency analysis discussed previously in the Hydrologic Modeling Section. This analysis provided the necessary starting water surface

profiles for tributaries to Bayou Manchac (i.e. Bayou Fountain and Ward Creek).

ROUGHNESS COEFFICIENTS

C.1.37. Manning's 'n' values were selected for channel and overbank areas at each cross-section. These estimates were based on visual field inspection and field photographs provided by survey parties that gathered geometric data. Ven Te Chow's book "Open Channel Hydraulics" and the U.S. Department of Transportation's "Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains" were used in determining the 'n' values. Since most alternatives studied were channel improvements, the NH record option available in HEC-2 was not used. Overbank 'n' values were therefore a weighted value for each overbank. Existing conditions channel roughness coefficients varied from 0.040 to 0.055 while overbank values ranged from 0.070 to 0.200.

BRIDGE AND CULVERT ANALYSIS

C.1.38. Energy losses caused by structures such as bridges and culverts were computed in two parts. First, the losses due to expansion and contraction of flow upstream and downstream of the structures were computed by HEC-2's standard step calculations. For all structures, the contraction and expansion coefficients used in computing transition losses were 0.3 and 0.5, respectively, while natural stream cross-sections used values of 0.1 and 0.3, respectively. Secondly, the losses through the structures were computed by either of two methods available in HEC-2; the normal bridge routine or the special bridge routine. Table C-1-9 shows the number of structures involved in the model analysis.

C.1.39. The normal bridge method was used for all circular culverts and some box culverts. The normal bridge method treats the cross-section at the bridge as it would any river cross-section, with the exception that the area of the bridge below the water surface is subtracted from the total area and the wetted perimeter is increased where the water surface elevation exceeds the low chord. Pier losses are accounted for by loss of area and the increased wetted perimeter on the piers.

C.1.40. Most bridges and large box culverts were modeled by the special bridge method. This method computes losses through the structure for low flow, weir flow and pressure flow or for any combination of these. The profiles through the bridge are calculated using hydraulic formulas (e.g. $Q=CLH^{1.5}$, $Q=CA[2gh]^{0.5}$) to determine the change in energy and water surface elevation.

WATERSHED ALTERNATIVE STUDIES

C.1.41. Alternatives considered for this study include the following:

1. Channel Improvement
2. Pumping Station
3. Floodgate
4. Ring Levee
5. Detention Storage

C.1.42. The channel improvement alternatives consisted of clearing and snagging, concrete-lining, channel enlargement and combinations of these. Clearing and snagging was considered as the minimum channel improvenent design for all of the channels studied. Channel improvements were limited to upstream of reaches impacted by backwater from the Amite and Comite Rivers. Improvements to stream reaches affected by backwater were limited to clearing and snagging to compensate for events not coincident with backwater influence. The channel enlargement alternatives were modelled using HEC-2's CI (channel improvement) option. The following guidelines were used in designing the channel enlargement alternatives.

1. Maintain existing channel slope.
2. Utilize available right-of-way, allowing 25 feet each side of the channel for servitude.
3. Use side slopes of 1 on 3.
4. For improved channels, use a Manning's 'n' = 0.035.
5. For concrete lined channels, use a Manning's 'n' = 0.015.
6. No reduction in total channel length.
7. Improvements on backwater reaches are limited to clearing or clearing and snagging.

C.1.43. Initially, several levels of channel improvement design were developed for optimization of the NED plan. In general, the 10-yr, 25-yr, 50-yr and 100-yr earthen channel designs were developed although in the latter part of the study, optimization of the plans often yielded a plan that provided protection for some event between the 10-yr and 25-yr events. For many of the channels, the 10-yr design consisted of the minimum channel design (i.e. cleared and snagged). For the remaining streams, the minimum channel design was also developed. Each level of design was sized to contain, where possible, flooding to within banks in the headwater reaches of the channel for the design frequency event. Available rights-of-way were determined by maps supplied by the City of Baton Rouge, Department of Public Works. For reaches where right-of-way boundaries were not shown, unlimited rights-of-way were assumed. Where concrete lining of the channel was used, it was modelled by changing Manning's 'n' value for the channel, in the HEC-2 model, to 0.015.

C.1.44. During the development of the channel improvement designs, data concerning the channel soils became available which limited the type of channel improvements that could be studied. Except for the Bayou Manchac and Bayou Fountain channels, all of the channels being studied are located in a layer of loess material which has very poor resistance to flowing water (see the F&M section for further detail). The soils specialists indicated that earthen channel enlargement would subject the channels to unacceptable bank erosion rates. Earthen channel improvements could be used only in reaches where the channels could be allowed to widen over time and additional maintenance requirements could be used. Minimum clearing and snagging (removal of major obstructions and debris from the channel while still leaving the majority of vegetation) could be used in some downstream reaches. This would be impractical in many of the upstream reaches because some erosion will still occur and the channels have already encroached on private back yards and structures. Where this occurs, concrete-lined channel improvements must be used to prevent further loss of existing banks.

C.1.45. During this study, pumping stations and/or floodgates were considered for Bayou Manchac, Clay Cut Bayou, Bayou Fountain, South Branch Bayou Fountain, and Elbow Bayou. The Bayou Fountain alternatives included a containment levee at the mouth.

C.1.46. Ring levee alternatives had previously been studied during both the Amite River and Tributaries, Louisiana Initial Evaluation Study, November 1984 and the Comite River Basin Feasibility Report, January 1990. For this study, ring levees were investigated for two subdivisions along Bayou Fountain. Both subdivisions had experienced severe flooding as a result of Tropical Storm Allison (27-28 June 1989) and appeared to be good candidates for this type of flood control method.

C.1.47. Because of the study area's topography and density of development, alternatives consisting of detention storage could not be applied in many areas. However, one basin in which this method of flood control could be considered was the upper reach of Lively Bayou and was, therefore, included in this study. Analysis did conclude, however, that flow detention in this basin would be only minimally effective.

COMITE RIVER DIVERSION PROJECT

C.1.48. The Amite River and Tributaries, Louisiana – Comite River Basin Feasibility Study, September 1990 proposed the Comite River Diversion Project as its Recommended Plan. The Comite River Diversion Project was authorized in Nov 92. When the East Baton Rouge Parish Feasibility Study was begun, existing conditions for the project area were determined without the effects of the proposed Comite River Diversion Project. Most of the proposed improvements were also analyzed without the diversion project. As a result of the Comite River Diversion Project being authorized, existing and with project conditions were

analyzed with the effects of the diversion project included. The results of those analyses are included in the remainder of this appendix. However, with-Comite River Diversion conditions are not provided for alternatives which were eliminated from further consideration before the diversion project was authorized. In addition, only a few of the stage-frequency curves and flood profile plates are different for the with-Comite River Diversion condition for the existing conditions and/or project conditions. As such, only those plates indicate the with-Comite River Diversion condition.

OVERFLOW MAPS

C.1.49. Overflow maps for each of the watersheds investigated in this study are provided in Appendix F. The maps delineate the existing conditions and, for the watersheds with a recommended plan, the with-project conditions floodplains. It should be noted that for this study, most of the recommended plans consist of providing either a 10-yr or 25-yr level of protection. As a result, the stage differences between with and without project conditions for the 100-yr events are generally less than 1.0 feet. This difference does not translate well when plotted on the overflow maps and, therefore, little useful information would be gained from providing 100-yr overflow maps. Instead, the overflow maps detail the with and without project conditions floodplains for the events which better demonstrate the impacts of the recommended plans.

BAYOU MANCHAC

GENERAL

C.1.50. Bayou Manchac begins near the Mississippi River levee, runs eastward to its confluence with Amite River and forms the southern boundary of East Baton Rouge Parish (see Plate C-2). Its major tributaries are Ward Creek, Bayou Fountain, Muddy Creek, and Alligator Bayou and has a total drainage area of approximately 159 square miles.

C.1.51. Alligator Bayou has a floodgate located near its mouth. It was completed around 1955 and serves to keep Amite River backwater which travels up Bayou Manchac, from entering Alligator Bayou and Spanish Lake. Except for flood events, the gates are left in an open position. Stop logs are used to maintain interim stages of approximately 5 feet NGVD.

C.1.52. As mentioned previously, when high stages occur on the Amite River, backwater from the Amite River causes Bayou Manchac to flow in the opposite direction toward the Mississippi River. The water from the Amite River flows beyond Ward Creek and Bayou Fountain toward a sump area between Bayou Manchac and Bayou Fountain. A roadway runs parallel

to Bayou Manchac on the south bank. This roadway, as well as the Alligator Bayou floodgates, keep Amite River backwater out of the Spanish Lake sump area for stages up to 15.5 feet NGVD.

Previous Studies

C.1.53. The Amite River and Tributaries Initial Evaluation Study, November 1984 considered a floodgate and dam structure across Bayou Manchac between Bayou Fountain and Ward Creek. It was determined the structure would reduce flood stages on lower Bayou Fountain and upper Bayou Manchac by an estimated 2 feet. However, the structure would increase flood stages on Bayou Manchac between the dam and the Amite River by preventing the sump area from capturing Amite River backwater flow. Further analysis of this type of alternative was conducted during this study at the request of local interest.

C.1.54. The Initial Evaluation Report also considered floodgates near the mouth of Bayou Manchac to prevent backwater flooding from the Amite River. The runoff volumes from the Bayou Manchac watershed are much greater than the available storage and thus stages within Bayou Manchac watershed would exceed existing conditions. Because of this a pump station was considered. The report estimated a pump size of about 10,000 cfs was necessary for the 10-year event at a cost in excess of $80 million. Consequently, no further analysis was conducted.

C.1.55. Bayou Manchac was improved from Ward Creek to its mouth in 1928 and again in 1964 for navigation and drainage purposes. Any channel improvement or enlargement would allow greater flows from the Amite River to backwater into the sump area and aggravate existing flooding problems. Therefore, any channel improvements alpernatives were eliminated from further consideration.

Hydraulic Analysis

C.1.56. There are stream gages on Bayou Manchac at the mouth, Hope Villa and Alligator Bayou (see Table C-1-6). Stage-frequency curves were developed at each of these sites using Beard's plotting positions, which is discussed in "Statistical Methods in Hydrology". Also, a stage-frequency curve for the mouth was developed from a HEC-2 analysis of the Amite River. Since this analysis utilized data from the Port Vincent gage, with a period of record of 40 years, the HEC-2 stage-frequency curve was adopted to insure consistency with previous studies along the Amite River.

C.1.57. Using this stage-frequency data, flowlines were developed along Bayou Manchac. Because the Amite River is the predominate flooding source for Bayou Manchac and the lower reaches of its tributaries, stages decrease in the upstream direction for most flood events. Profile plots of the 10-yr and 100-yr existing flowlines are shown on Plate C-9. The following table shows stage-frequency data developed

along Bayou Manchac (Stage-frequency curves are shown on Plates C-50 to C-52). These stages were used for starting water surface elevations in HEC-2 runs of these tributaries streams.

Table C-1-10
Bayou Manchac
Existing Conditions Stage Data (feet NGVD)

WITHOUT COMITE RIVER DIVERSION

Event	@ Mouth	Ward Creek	Bayou Fountain
1-YR	8.5	8.9	8.9
2-YR	11.2	11.2	11.2
5-YR	13.9	12.7	12.7
10-YR	16.3	14.2	14.2
25-YR	17.3	15.3	15.3
50-YR	18.6	15.7	15.7
100-YR	19.6	15.9	15.9
200-YR	20.2	16.1	16.1
500-YR	20.9	16.2	16.2

WITH COMITE RIVER DIVERSION

Event	@ Mouth	Ward Creek	Bayou Fountain
1-YR	8.1	8.5	8.5
2-YR	10.8	10.8	10.8
5-YR	13.3	12.5	12.5
10-YR	15.7	13.6	13.6
25-YR	17.0	14.7	14.7
50-YR	17.9	15.0	15.0
100-YR	18.5	15.5	15.5
200-YR	19.8	15.7	15.7
500-YR	20.1	16.0	16.0

Hydrologic Analysis

C.1.58. The following table provides the existing conditions discharge data used for Bayou Manchac.

Table C-1-11
Bayou Manchac
Existing Conditions Discharge Data

Event	Discharges (cfs)
1-YR	975
2-YR	0
5-YR	-2,900
10-YR	-5,500
25-YR	-6,300
50-YR	-9,250
100-YR	-11,700
200-YR	-13,400
500-YR	-15,300

Note: Negative discharges are from Amite River backwater.

Additional Studies

C.1.59. Because of the backwater influence from the Amite River and the elimination of floodgate (or pump station) alternatives, no additional alternatives were studied. Overflow maps for Bayou Manchac denoting the existing conditions 10-yr floodplain are provided on plates at the end of this appendix.

BAYOU FOUNTAIN

General

C.1.60. Bayou Fountain originates on the Louisiana State University campus and generally flows in a southeasterly direction into Bayou Manchac (see Plate C-3). Its major tributaries are Elbow Bayou, North Branch Bayou Fountain, South Branch Bayou Fountain and Selene Bayou. The Bayou Fountain watershed has a total area of approximately 41 square miles.

C.1.61. Bayou Fountain was previously enlarged from its mouth to Louisiana State Highway 42 by the City of Baton Rouge, Department of Public Works. This enlargement was completed in 1955 and lowered stages due to headwater flooding. Backwater flooding was reduced by channel improvements on the Amite River which were completed in 1964.

C.1.62. Four types of flood reduction alternatives were investigated for this watershed. They are as follows:

1. Channel improvements for various levels of protection.
2. Pumping stations with containment levee and gravity outlet.
3. Floodgates with containment levee.
4. Ring levees for individual subdivisions.

Hydraulic Analysis

C.1.63. There are no daily stage recording stations on Bayou Fountain; however, high water pipes are located at Ben Hur Road and Gardere Lane (see Plate C-3). Stage data for flood events from 1962 through 1989 are available. Stage-frequency curves were developed at each of these locations using Beard's plotting positions. Burbank Drive, shown on Plate C-3, was constructed in 1979 and parallels Bayou Fountain. The road embankment encroaches on the Bayou Fountain floodplain and thus has a significant impact on the larger flood events. The stage-frequency curves developed from past data do not adequately reflect this and therefore, stages for events in excess of the 25-year event were adjusted upward and reflected in the table below.

TABLE C-1-12
BAYOU FOUNTAIN
EXISTING CONDITIONS STAGES (NGVD)

WITHOUT COMITE RIVER DIVERSION

Event	@ Mouth	@ Gardere Lane		@ Ben Hur Road	
		Beard	HEC-2	Beard	HEC-2
1-YR	8.9	11.8	12.3	16.0	15.5
2-YR	11.2	15.3	14.4	17.8	17.1
5-YR	12.7	16.5	15.8	18.8	18.2
10-YR	14.2	16.8	16.6	19.2	18.9
25-YR	15.3	17.3	17.4	19.5	19.4
50-YR	15.7	17.5	17.8	19.6	20.1
100-YR	15.9	17.6	18.2	19.7	20.4
200-YR	16.1	17.8	18.7	19.8	20.7
500-YR	16.2	17.9	19.4	19.9	21.1

WITH COMITE RIVER DIVERSION

Event	@ Mouth	@ Gardere Lane	@ Ben Hur Road
1-YR	8.5	12.3	15.5
2-YR	10.8	14.4	17.1
5-YR	12.5	15.8	18.2
10-YR	13.6	16.6	18.9
25-YR	14.7	17.4	19.4
50-YR	15.0	17.8	20.1
100-YR	15.5	18.2	20.4
200-YR	15.7	18.7	20.7
500-YR	16.0	19.4	21.1

C.1.64. Development of discharges are discussed in the "Hydrologic Modeling" section. The HEC-2 model was calibrated to approximate Beard's stages using the following discharges:

TABLE C-1-13
BAYOU FOUNTAIN
EXISTING CONDITIONS DISCHARGES (CFS)

Event	@ Mouth	Location @ Siegen Lane	@ Ben Hur Road
1-YR	700	620	400
2-YR	1,170	990	560
5-YR	1,850	1,530	770
10-YR	2,690	2,230	990
25-YR	3,990	3,250	1,300
50-YR	5,130	4,200	1,540
100-YR	6,500	5,160	1,800
200-YR	8,520	6,550	2,050
500-YR	12,000	8,720	2,450

C.1.65. On June 27-28, 1989 the Baton Rouge weather station recorded 9.7 inches of rain due to Tropical Storm Allison. By Technical Paper 40 of the National Weather Service, this was approximately a 25-year, 24-hour rainfall event. Stages recorded at Ben Hur road and Gardere Lane matched the 25-year stages produced by the HEC-2 model.

BAYOU FOUNTAIN
TROPICAL STORM ALLISON - STAGES (NGVD)

Method	@ Gardere Lane	@ Ben Hur Road
Observed Stages	17.39	19.42
HEC-2 25-yr Stages	17.40	19.40

ALTERNATIVES

Channel Improvements

C.1.66. Bayou Fountain doesn't experience the soil erodability problem mentioned previously and prevalent in other watersheds in this study. Several variations and combinations of earthen and concrete channels were studied. Because backwater from Bayou Manchac extends from the mouth of Bayou Fountain to just upstream of the Siegen Lane bridge, the alternatives were designed only to provide various levels of protection in the headwater reaches. In general, the channel improvements were sized to contain headwater flows to within banks for the design frequencies. However, for the 100-yr design, it is impractical to design a channel enlargement to put the flood stages within banks. In addition, the local sponsor supplied detailed information on a 60" diameter gravity sewer main that crosses the channel upstream of Gardere Lane. The sewer main is suspended above the bottom of the channel but its invert is low enough to affect the flowlines during flood events. East Baton Rouge Parish, which owns the sewer line indicated that it would be unable to raise or bury the line and maintain gravity flow properly. A booster pump or lift station was eliminated from consideration due to the probable expense of the station and the cost of operation and maintenance. As such, a concrete U-channel was designed underneath the sewer line to minimize the head losses through this reach. The following table gives pertinent data about the channel improvement alternatives.

TABLE C-1-14
BAYOU FOUNTAIN
CHANNEL IMPROVEMENT ALTERNATIVES

PLAN	REACH	IMPROVEMENT
BF10A - 10-YR Earthen Channel	B. Manchac to Siegen Lane	Clear & Snag
	Siegen Lane to Gardere Lane	50' BW, 1V on 3H SS Earthen Channel
	Gardere Lane to 4400' upstream (Mile 54.3)	Clear & Snag
	At Exist. Sewer Line Crossing upstream of Gardere Lane	Conc. U-Channel, 50' BW, Inv. Elev 4.0
BF10B - 10-YR	B. Manchac to Siegen Lane	Clear & Snag
	Siegen Lane to Gardere Lane	50' BW, 1V on 3H SS Earthen Channel
	Gardere Lane to 4400' upstream (Mile 54.3)	Clear & Snag
	At Exist. Sewer Line Crossing upstream of Gardere Lane	Conc. U-Channel, 50' BW, Inv. Elev. 4.0
	Mile 54.3 to Ben Hur Road Bridge	Clear & Snag
BF25A - 25-YR	B. Manchac to Siegen Lane	Clear & Snag
	Siegen Lane to Gardere Lane	50' BW, 1V on 3H SS Earthen Channel
	Gardere Lane to 4400' upstream (Mile 54.3)	5' BW, 1V on 3H SS Concrete Lined
	At Exist. Sewer Line Crossing upstream of Gardere Lane	Conc. U-Channel, 60' BW, Inv. Elev. 3.0
BF25B - 25-YR	B. Manchac to Siegen Lane	Clear & Snag
	Siegen Lane to Gardere Lane	50' BW, 1V on 3H SS Earthen Channel
	Gardere Lane to 4400' upstream (Mile 54.3)	5' BW, 1V on 3H SS Concrete Lined
	At Exist. Sewer Line Crossing upstream of Gardere Lane	Conc. U-Channel, 60' BW, Inv. Elev. 3.0
	Mile 54.3 to Ben Hur Road Bridge	20' BW, 1V on 3H SS Earthen Channel

Pumping Stations and/or Floodgates on Bayou Fountain

C.1.67. An alternative utilizing a pumping station at the mouth of Bayou Fountain was developed. The alternative consists of a containment levee at the mouth of Bayou Fountain, gravity outlets for normal daily discharges, and a pumping station for drainage during backwater flooding from the Amite River. The containment levee prevents Amite River backwater flows from filling the large sump area on Bayou Fountain below the Siegen Lane bridge. The sump area is used to store Bayou Fountain discharges and, therefore, minimizes the required pump station capacities.

C.1.68. This alternative was analyzed using a HEC-1 model developed for Bayou Fountain and calibrated to FIS discharges. The proposed sump area and pumping station were modeled using HEC-1's reservoir and pump options.

C.1.69. The containment levee was located approximately 1500 feet upstream of the mouth and runs generally in a northeast to southwest direction where it meets the natural ridge paralleling Bayou Manchac. It follows the ridge maintaining a crest elevation of 18.0 feet NGVD until it meets higher ground. The crest elevation was set at the 100-year flood elevation plus 2 feet of freeboard.

C.1.70. Pumping station capacities of 300, 600, and 900 cfs were considered for this alternative. Each design consisted of three pumps. The average daily stage of the sump area is 2.3 feet NGVD based on 35 years of daily stage recordings at the Spanish Lake floodgate on Alligator Bayou. For each of these alternatives, it was assumed that the first pump would be turned on when sump pool stages exceeded 3.5 feet NGVD.

C.1.71. The gravity outlets were designed to pass interior flows up to the 25-year discharges, minus the pumping station capacity, with a minimum of 3 feet of head. They were located in the containment levee with an invert elevation of 0.0 feet NGVD. The gravity outlets are concrete box culverts with the following dimensions:

Pump Capacity	Gravity Outlet
300 cfs	one 10'x10'
600 cfs	one 8'x8'
900 cfs	one 6'x6'

C.1.72. The pumping station alternatives produced stage lowerings of 0-5 feet in the sump area, however, the impact at Ben Hur Road was only 0.1-0.2 feet of lowering. The following table provides the stage reductions for the 900 cfs pumping station.

TABLE C-1-15
BAYOU FOUNTAIN
900 CFS PUMPING STATION
PROJECT STAGE REDUCTIONS (FEET)
Without Comite River Diversion

Event	Siegen Lane	Gardere Lane	Ben Hur Road
1-YR	0.8	0.2	0.2
2-YR	1.4	0.2	0.2
5-YR	1.1	0.1	0.1
10-YR	1.9	0.0	0.2
25-YR	2.0	0.0	0.3
50-YR	1.6	0.0	0.1
100-YR	0.4	0.0	0.0
200-YR	0.3	0.0	0.0
500-YR	0.2	0.0	0.0

C.1.73. An alternative of a gravity outlet in the containment levee and removal of the pumping station was considered. Like the pumping station alternatives, this alternative would prevent flows due to backwater from Bayou Manchac from entering the Bayou Fountain sump area. Historically, stages in Bayou Fountain will usually peak before the Bayou Manchac backwater, thereby allowing flood flows from Bayou Fountain to pass through the proposed floodgates. As stages rise on Bayou Manchac, the floodgates would be closed and Bayou Fountain flows would be stored in the sump area. The floodgates were sized to pass the 25-year flow with a head of 3 feet. Interior stages above the sump area would not exceed existing conditions stages. The floodgates would consist of two 8'x8' concrete box culverts placed in the containment levee with an invert

C.1.74. This alternative, like the pumping station alternatives, provides additional storage capacity by preventing backwater from filling the sump area. However, upstream of the sump area (above Siegen Lane), flood stages were only reduced by 0 to 0.5 feet. The following table provides the maximum stage reductions for this alternative.

TABLE C-1-16
BAYOU FOUNTAIN
FLOODGATE ALTERNATIVE
PROJECT STAGE REDUCTIONS (FEET)
Without Comite River Diversion

Event	Siegen Lane	Gardere Lane
1-YR	0.8	0.1
2-YR	1.4	0.1
5-YR	1.1	0.1
10-YR	2.2	0.0
25-YR	2.0	0.0
50-YR	1.7	0.0
100-YR	0.4	0.0
200-YR	0.0	0.0
500-YR	0.0	0.0

Pumping Station on Elbow Bayou

C.1.75. Elbow Bayou, a tributary of Bayou Fountain, has a total drainage area of approximately 15 square miles. As stated before, the Bayou Fountain watershed consists of approximately 41 square miles. An alternative was considered that would remove the majority of Elbow Bayou flows from Bayou Fountain. Openings along Highway 30 for Elbow Bayou drainage to Bayou Fountain would be closed and existing channels would be enlarged to convey Elbow Bayou drainage towards the Mississippi River Levee where a pumping station would lift the flows over the levee into the Mississippi river. For this alternative, a HEC-1 model of Elbow Bayou was developed with a sump pool and pumping station being modelled using the HEC-1 reservoir and pump options.

C.1.76. The pumping station would be located at the Mississippi River Levee near River Mile 220. This location would allow Elbow Bayou flows to be stored in the low area near this station. The pumping station would consist of five 250 cfs pumps. The pump capacity was sized such that interior stages would not exceed existing conditions on Elbow Bayou for the range of frequencies studied. The first pump would be turned on when interior stages in the sump exceeded 16.0 feet NGVD. The pumps would be required to lift discharges over the Mississippi River Levee which has a design grade, at this location, of 47.5 feet NGVD. In addition, approximately 3.5 miles of channel enlargement and development would be required to convey the flows to the sump area and to the pumping station.

C.1.77. The results of this alternative indicate that peak stages on Bayou Fountain are not significantly reduced (0.2 feet) by removing the Elbow Bayou basin west of Highway 30. This occurs because the Elbow Bayou hydrograph is attenuated and its peak is reduced when routed through the natural sump area between Highway 30 and Burbank Drive. Because of the small impact on Bayou Fountain flood stages, this alternative was eliminated from further consideration.

Pumping Station on South Branch Bayou Fountain near Confluence with Main Stem Bayou Fountain

C.1.78. South Branch Bayou Fountain, a tributary of Bayou Fountain, has a drainage area of approximately 830 acres. The main stem of Bayou Fountain at the confluence with South Branch has a drainage area of 250 acres. The total drainage area contiguous to this point is 1080 acres (1.7 square miles). At the request of the local sponsor, an alternative to pump flows from this totoal drainage area to the Mississippi River was analyzed. Louisiana State University had recently commissioned a consultant to study the feasibility of constructing a pump station near the lower end of South Branch Bayou Fountain and pumping runoff discharges to the Mississippi River. The study was conducted by Rodi &

Songy, Inc. and titled "Bayou Fountain Stormwater Pumping Station", March 1991. The study concluded that constructing a pump station and providing a gated closure of South Branch Bayou Fountain and main stem Bayou Fountain at or near their junction would provide substantial stage lowerings along these channels.

C.1.79. The study by Rodi & Songy, Inc. had proposed a 700 cfs pump station on the lower end of South Branch Bayou Fountain, a gated closure of South Branch Bayou Fountain and main stem Bayou Fountain at their confluence, and a 0.8 mile new channel cut from the lower end of South Branch Bayou Fountain to the proposed location of the pumping station. Using the study, several options were studied. Three pump station capacities were analyzed: 700 cfs, 525 cfs, and 350 cfs, all with the proposed channel closure and new channel cut. The 525 cfs and 350 cfs pump stations were also analyzed with channel improvements of South Branch Bayou Fountain to provide additional flood reduction benefits. In addition, due to the estimated high cost of constructing a pump station to pump over the Mississippi Levee, an additional location at the closure of South Branch Bayou Fountain and the main stem Bayou Fountain (with the pump station to discharge into Bayou Fountain) was investigated.

C.1.80. Preliminary discussions with F&M Br indicated that seepage from the Mississippi River Levee when the river had high stages would be severe enough to affect the operating stages of the proposed pump stations. In fact, Louisiana State University has several buildings located very close to the levee and have historically experienced many problems associated with the seepage. As a result, the flood reductions benefits from the proposed pump station will be reduced (or a larger pump station will be required). These pump station plans were determined not to be cost effective, regardless of adjustments for seepage.

Combination Plans

C.1.81. Additional alternatives were studied in which the pump station and floodgate plans were combined with earthen and concrete-lined channel improvements for the main channel of Bayou Fountain. These combined inprovements provide additional stage lowerings over those provided by the channel improvements alone of about 1.0 to 5.0 feet in the sump area near the mouth of Bayou Fountain and of about 0.5 to 1.5 feet near the upper limit of the backwater effects near Siegen Lane. However, in the headwater reaches above Siegen Lane, where the majority of potential benefits are available, the additional stage lowerings are generally less than 0.2 feet. As a result, the combination of pump stations or floodgates with the channel improvement plans does not provide a significant amount of additional flood control benefits over the individual plans.

Ring Levees

C.1.82. Ring levee alternatives were considered for two subdivisions along Bayou Fountain, Highland and Meadow Bend. On June 27-28, 1989 Tropical Storm Allison provided about 10 inches of rain in a 24-hour period on the Bayou Fountain watershed causing the two subdivisions to experience severe flooding. HEC-1 models, utilizing the reservoir and pump options, were developed for each subdivision. The ring levee crests were set at the 100-year flood elevation plus 2 feet of freeboard (19.8 feet NGVD for both subdivisions). The levee section has 1V on 4H side slopes with a 10 foot wide crown. The pump stations and gravity outlets were designed to evacuate the 10-year, 24-hour rainfall within 48 hours. The pump stations were sized to prevent interior stages from exceeding the damage elevation of 17.0 feet NGVD for the 10-year flood and to prevent interior stages from exceeding existing conditions stages for the range of frequencies studied. The gravity outlet culverts were sized to pass the 10-year flow with 1 foot of head. The following table provides the hydraulic design information for the ring levee alternatives.

TABLE C-1-17
BAYOU FOUNTAIN
RING LEVEE ALTERNATIVES
DESIGN DATA

	Subdivision	
Design Data	Highland Creek	Meadow Bend
Levee Design		
100-year stage (ft.NGVD)	17.8	17.8
Levee crown elev. (ft. NGVD)	19.8	19.8
Interior damage elev. (ft.NGVD)	17.0	17.0
Pump Station Design		
Pump capacity (cfs)	30	120
HEC-1 max. stage (ft. NGVD)	17.0	16.9
Max. head (feet)	1.8	1.8
Pump on stage (ft. NGVD)	16.0	16.0
Culvert Design		
No. of culverts	3	3
Peak outflow (cfs)	168	185
Max. velocity (ft/sec)	5.8	6.4
Culvert diameter (ft)	3.5	3.5
Outlet invert (ft. NGVD)	7.2	8.0
Culvert length (ft)	95	90
HEC-1 max. stage (ft. NGVD)	16.7	17.0

TENTATIVELY SELECTED PLAN -- BAYOU FOUNTAIN

C.1.83. The 10-year earthen channel design (Plan BF10B) is the tentatively selected plan. The channel improvement involves clearing of debris from the mouth of Bayou Fountain to Siegen Lane, channel enlargement of 50' bottom width, 1V on 3H side slopes from Siegen Lane

to Gardere Lane, and clearing and snagging of the channel from Gardere Lane to E. Boyd Blvd. To avoid relocating a primary sewer line, a concrete U-channel is included under the sewer line upstream of Gardere Lane. Plate C-3, which is a map of Bayou Fountain and its tributaries, shows the proposed channel improvements of the recommended plan. Plates C-10 to C-15 provide the existing conditions and project conditions flowlines for the 10-year and 100-yr events and also shows the extent of the channel improvements. Stage-frequency curves for existing and project conditions at two locations are provided as Plates C-53 to C-54. Overflow maps for the Bayou Fountain watershed denoting the existing conditions and with project conditions 10-yr floodplains are provided on plates in Appendix F. The following table provides the stage reductions for the tentatively selected plan (TSP) at key points along Bayou Fountain.

TABLE C-1-18
BAYOU FOUNTAIN
10-YR EARTHEN CHANNEL DESIGN (TSP)
PROJECT STAGE REDUCTIONS (FEET)

WITHOUT COMITE RIVER DIVERSION

Event	Siegen Lane	Gardere Lane	Ben Hur Road
1-YR	0.3	2.4	1.0
2-YR	0.4	2.3	1.0
5-YR	0.0	1.8	0.7
10-YR	0.0	1.6	0.7
25-YR	0.0	1.2	0.6
50-YR	0.0	1.0	0.5
100-YR	0.0	0.9	0.5
200-YR	0.0	0.9	0.3
500-YR	0.0	0.8	0.0

WITH COMITE RIVER DIVERSION

Event	Siegen Lane	Gardere Lane	Ben Hur Road
1-YR	0.7	2.4	1.0
2-YR	0.3	2.3	1.0
5-YR	0.0	1.9	0.7
10-YR	0.0	1.7	0.7
25-YR	0.0	1.6	0.6
50-YR	0.0	1.4	0.5
100-YR	0.0	1.1	0.5
200-YR	0.0	1.1	0.3
500-YR	0.0	0.9	0.0

WARD CREEK AND TRIBUTARIES

General

C.1.84. Ward Creek, with a drainage area of about 45 square miles, is a major tributary of Bayou Manchac. It originates in the north-central

portion of Baton Rouge and flows in a southerly direction changing to a southeasterly direction as its approaches the corporate limits. The flood plain is rather narrow within the city, but broadens quickly downstream of the corporate limits (see Plate C-4). Ward Creek's major tributaries include North Branch Ward Creek and Dawson Creek and its tributary of Bayou Duplantier.

C.1.85. The North Branch Ward Creek tributary has a drainage area of 7.8 square miles and discharges into Ward Creek at about Mile 7.8. It drains the eastern portion of the watershed. Dawson Creek is the largest tributary to Ward Creek with a drainage area of about 16.0 square miles. It discharges into Ward Creek at about Mile 5.8. Dawson Creek drains the western portion of the watershed. Bayou Duplantier is the main tributary to Dawson Creek with a drainage area of about 7.7 square miles. It discharges into Dawson Creek at about Mile 4.0 and drains the western portion of the Dawson Creek watershed.

C.1.86. Channel improvements on the lower portion of the Ward Creek watershed were made by the State of Louisiana, Department of Public Works between September 1953 and May 1957. Improvements included realinements of some parts of the Ward Creek and excavation of the channel into a trapezoidal cross-section. The realinement portion of Ward Creek is approximately 3.5 miles long and shown as the New Relocated Channel on Plate C-4. All following references to this reach of Ward Creek pertain to the relocated channel. In addition, North Branch Ward Creek was improved from its mouth to Florida Blvd, Dawson Creek was improved from its mouth to College Drive (a distance of 5.8 miles), and Bayou Duplantier was improved from its mouth upstream a distance of 1.2 miles. Ward Creek was concrete-lined in 1966-67 from Clay Cut Road to Government Street. Later, the concrete lining was extended beginning at the corporate limits near College Drive to the Choctaw Village Shopping Center at its head waters. Also, from 1966 to 1967, North Branch Ward Creek had some additional channel improvement and some channel realignment from its mouth to Jefferson Highway. In the early 1960's, Bayou Duplantier was deepened from Mile 1.2 to Standford Avenue.

Hydraulic Analysis

C.1.87. The Ward Creek watershed discharges into Bayou Manchac just west of Highway 61 (Airline Highway). A stream gage is located on Bayou Manchac at Hope Villa with a period of record beginning in 1945. This stage data was used to develop a stage-frequency curve using Beard's plotting positions as described in "Statistical Methods in Hydrology" by Dr. Leo Beard. The development of the stage-frequency curve is discussed in the Bayou Manchac Hydraulic Analysis Section.

C.1.88. There are several U.S.G.S. stream gages in the Ward Creek watershed. Their locations and periods of record are provided in Table C-1-7.

C.1.89. The January 1979 East Baton Rouge Parish Flood Insurance Study used this gage information and historical flowlines for the 10-yr, 100-yr, and 500-yr flood events. The limits of this study were from the mouth of Ward Creek to Government Street, from the mouth of North Branch Ward Creek to Florida Blvd, and from the mouth of Dawson Creek to just downstream of College Drive. For the November 1985 Flood Insurance Study, the upstream limits of the study area were extended to Choctaw Drive near Choctaw Village Shopping Center on Ward Creek and to just upstream of Clay Cut Road on Dawson Creek. In addition, Bayou Duplantier was added from its mouth to just upstream of South Campus Drive. New cross-sectional data was taken in 1986 at all bridges and major tributaries between the mouth and the corporate limits. A HEC-2 model was developed using the 1986 cross-sectional data and the 1985 FIS cross-sectional data north of the corporate limits. The model was calibrated to approximate the FIS flowlines.

TABLE C-1-19
WARD CREEK AND TRIBUTARIES
EXISTING CONDITIONS STAGES (FT NGVD)

WITHOUT COMITE DIVERSION

Ward Creek

Event	Barringer Foreman Rd	Siegen Lane	N. Branch Ward Creek	Corporate Blvd	Government Street
1-YR	12.9	16.3	22.3	34.2	39.7
2-YR	14.5	17.7	23.7	35.4	40.7
5-YR	16.1	19.4	25.1	36.5	41.8
10-YR	17.6	21.0	26.3	37.4	42.7
25-YR	18.8	22.0	27.2	38.1	43.7
50-YR	19.5	22.8	28.0	38.7	44.7
100-YR	20.1	23.6	28.5	39.1	45.8
200-YR	20.8	24.4	29.2	39.5	46.8
500-YR	21.4	25.3	30.1	40.0	48.2

WITH COMITE RIVER DIVERSION

Ward Creek

Event	Barringer Foreman Rd	Siegen Lane	N. Branch Ward Creek	Corporate Blvd	Government Street
1-YR	12.8	16.3	22.3	34.2	39.7
2-YR	14.3	17.7	23.7	35.4	40.7
5-YR	16.0	19.4	25.1	36.5	41.8
10-YR	17.4	21.0	26.3	37.4	42.7
25-YR	18.6	22.0	27.2	38.1	43.7
50-YR	19.3	22.8	28.0	38.7	44.7
100-YR	20.0	23.6	28.5	39.1	45.8
200-YR	20.7	24.4	29.2	39.5	46.8
500-YR	21.3	25.3	30.1	40.0	48.2

TABLE C-1-19 (Continued)
WARD CREEK AND TRIBUTARIES
EXISTING CONDITIONS STAGES (FT NGVD)

WITH AND WITHOUT COMITE RIVER DIVERSION

North Branch Ward Creek

Event	Mouth	I-12	Old Hammond Highway	Goodwood Blvd	Florida Blvd
1-YR	22.3	27.7	34.0	41.7	47.5
2-YR	23.7	28.7	35.1	42.4	48.2
5-YR	25.1	29.6	36.2	43.0	48.9
10-YR	26.3	30.1	37.2	43.5	49.8
25-YR	27.2	31.6	38.2	44.0	50.7
50-YR	28.0	32.3	38.8	44.4	51.3
100-YR	28.5	33.0	39.1	44.8	51.9
200-YR	29.2	33.5	39.4	45.0	52.3
500-YR	30.1	34.0	39.7	45.3	52.8

Dawson Creek

Event	Mouth	Bluebonnet Road	Moss Side Lane
1-YR	18.4	19.5	22.6
2-YR	19.7	20.9	24.0
5-YR	21.1	22.2	25.2
10-YR	22.3	23.4	26.3
25-YR	23.2	24.3	27.1
50-YR	24.0	25.1	27.6
100-YR	24.7	25.8	28.1
200-YR	25.4	26.3	28.4
500-YR	26.2	27.0	28.9

Bayou Duplantier

Event	Mouth	Lee Drive	Stanford Avenue
1-YR	21.1	21.1	21.2
2-YR	22.5	22.5	22.5
5-YR	23.7	23.7	23.7
10-YR	24.8	24.8	24.8
25-YR	25.7	25.7	25.7
50-YR	26.3	26.3	26.3
100-YR	26.9	27.0	27.0
200-YR	27.4	27.4	27.4
500-YR	27.9	27.9	27.9

C.1.90. The following table provides the discharges used for the existing conditions model. The development of these discharges was previously discussed in the Hydrologic Modeling Section.

TABLE C-1-20
WARD CREEK
EXISTING CONDITIONS DISCHARGES (CFS)

Ward Creek

Event	@ Mouth	Dawson Creek	N. Branch Ward Creek	Government Street
1-YR	5,360	4,320	2,770	1,820
2-YR	6,350	5,200	3,290	2,180
5-YR	7,710	6,280	3,960	2,590
10-YR	9,050	7,410	4,610	3,020
25-YR	10,600	8,650	5,370	3,510
50-YR	12,100	9,900	6,040	3,950
100-YR	13,500	11,000	6,670	4,360
200-YR	15,200	12,500	7,240	4,670
500-YR	17,800	14,500	8,180	5,230

North Branch Ward Creek

Event	Mouth	Jefferson Highway	Old Hammond Highway
1-YR	3,760	2,820	1,880
2-YR	4,490	3,370	2,250
5-YR	5,240	3,930	2,620
10-YR	6,040	4,530	3,020
25-YR	6,970	5,230	3,490
50-YR	7,760	5,820	3,880
100-YR	8,490	6,370	4,250
200-YR	9,010	6,760	4,500
500-YR	9,680	7,260	4,840

Dawson Creek

Event	Mouth	Bluebonnet Road	Moss Side Lane
1-YR	2,280	2,280	2,010
2-YR	2,900	2,900	2,490
5-YR	3,360	3,360	3,040
10-YR	3,920	3,920	3,530
25-YR	4,570	4,570	4,030
50-YR	5,060	5,060	4,600
100-YR	5,740	5,740	5,130
200-YR	6,070	6,070	5,470
500-YR	6,480	6,480	5,970

Bayou Duplantier

Event	Mouth	Stanford Avenue
1-YR	540	450
2-YR	650	540
5-YR	720	640
10-YR	807	740
25-YR	1,040	870
50-YR	1,160	964
100-YR	1,280	1,073
200-YR	1,410	1,160
500-YR	1,580	1,300

ALTERNATIVES

Channel Improvement

C.1.91. For this watershed, soil erodability problems exist (see F&M Br report) which significantly limit the type of channel improvements that can be studied. Because the backwater effects of the Amite River extend from the mouth of Ward Creek to about 4000 feet upstream, no improvements were studied in this reach. Clearing and snagging was used on some of the lower reaches where local development had not encroached on the channel. For the upstream reaches, concrete-lining was analyzed as a means of both improving the channel capacity and providing bank stability where private properties encroach on channel banks. Some clearing and snagging of upstream reaches were studied, but this required significant rights-of-way due to the projections of bank failure. Local interests have recently enlarged and straightened a reach for approximately 7000 ft downstream from Siegen Lane and are currently replacing the Siegen Lane Bridge with a high rise span to enhance an anticipated shopping complex. The enlarged channel is large enough to preclude the need for any further channel improvement in this reach for the forseeable future. In addition, local agencies have recently concrete-lined a 1200 foot portion of the mile long reach between I-10 and I-12 of North Branch Ward Creek. This work was done primarily for channel stability protection. The concrete-lined section has a bottom width of 32 feet and 1V on 2H side slopes. The section is in good shape, so when additional concrete-lining of this reach was studied, it was tied in with the existing concrete-lining. Because the channel is presently concrete-lined from the corporate limits near College Drive to its headwaters at Choctaw Village Shopping Center, no additional improvements were considered for this reach other than to clear and repair the existing channel. For existing conditions, for the range of flood frequencies on Bayou Duplantier, there is only a 0.2 foot head loss. Because Bayou Duplantier acts as a sump area, channel improvements would not be effective. As such, no improvements were designed for this stream. All the stage lowerings on this channel are due to downstream improvements on Dawson Creek and Ward Creek. As discussed above, the initial alternatives studied provided 25-yr, 50-yr, and 100-yr level of protection using concrete-lining of Ward Creek with and without the tributaries. These alternatives, however, did not prove cost-effective. As a result, reduced improvements were studied to try to find a cost-effective plan. The following table gives pertinent data for this last group of channel improvement alternatives studied.

TABLE C-1-21
WARD CREEK AND TRIBUTARIES
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
PLAN WCC-P4A -- Earthen and Concrete Improvements		
Ward Creek	Mouth to 4000 ft upstream	No Work
	4000 ft upstream to 1200 ft u/s Pecue Lane	Minimal Clearing & Snagging
	1200 ft u/s Pecue Lane to Siegen Lane	No Work: 150' BW by Developer made, Siegen Br replaced
	Siegen Ln to 3300 ft d/s of Bluebonnet Rd	Concrete-Line: 30'BW, 1V on 3H SS
	3300 ft d/s Bluebonnet Rd to Bluebonnet Rd	Concrete-Line: 40'BW, 1V on 3H SS
	Bluebonnet Rd to I-10	Concrete-Line: 30'BW, 1V on 3H SS
	I-10 to Corporate Limits	Concrete-Line: 15'BW, 1V on 3H SS
	Corporate Limits to Choctaw Drive	Clear Existing Concrete Channels
North Br Ward Ck	Mouth to Florida Blvd	Concrete-Line: 20'BW, 1V on 3H SS
Dawson Creek	Mouth to College (Lee) Dr	Concrete-Line: 20'BW, 1V on 3H SS
	College Dr to Hundred Drive	Concrete-Line: Oaks 5'BW, 1V on 3H SS
Bayou Duplantier	Mouth to Darymple Drive	No Work

TABLE C-1-21 (Continued)
WARD CREEK AND TRIBUTARIES
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
PLAN WCC-P4B -- Earthen and Concrete Improvements		
Ward Creek	Mouth to 4000 ft upstream	No Work
	4000 ft upstream to Barringer Forman Road	Minimal Clearing and snagging
	Barringer Forman Road to Barringer Forman Road Bridge	Replace Bridge; improve channel immediately u/s and d/s of bridge:
	Barringer Foreman Rd to 1200 ft u/s Pecue Lane	Minimal clearing and snagging
	1200 ft u/s Pecue Lane to Siegen Lane	No Work: 150' BW by Developer made, Siegen Br replaced
	Siegen Ln to 3300 ft d/s of Bluebonnet Rd	Concrete-Line: 30'BW, 1V on 3H SS
	3300 ft d/s Bluebonnet Rd to Bluebonnet Rd	Concrete-Line: 40'BW, 1V on 3H SS
	Bluebonnet Rd to I-10	Concrete-Line: 30'BW, 1V on 3H SS
	I-10 to Corporate Limits	Concrete-Line: 15'BW, 1V on 3H SS
	Corporate Limits to Choctaw Drive	Clear Existing Concrete Channels
North Br Ward Ck	Mouth to Florida Blvd	Concrete-Line: 20'BW, 1V on 3H SS
Dawson Creek	Mouth to College (Lee) Dr	Concrete-Line: 20'BW, 1V on 3H SS
	College Dr to Hundred Oaks Drive	Concrete-Line: 5'BW, 1V on 3H SS
Bayou Duplantier	Mouth to Darymple Drive	No Work

TABLE C-1-21 (Continued)
WARD CREEK AND TRIBUTARIES
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
PLAN WCC-P4A1 --	Earthen and Concrete Improvements	
Ward Creek	Mouth to 4000 ft upstream	No Work
	4000 ft upstream to 1200 ft u/s Pecue Lane	Minimal Clearing & Snagging
	1200 ft u/s Pecue Lane to Siegen Lane	No Work: 150' BW by Developer made, Siegen Br replaced
	Siegen Ln to Corporate Limits	Minimal Clearing & Snagging
	Corporate Limits to Choctaw Drive	Clear Existing Concrete Channels
North Br Ward Ck	Mouth to I-12	Concrete-Line: 32'BW, 1V on 3H SS
	I-12 to Florida Blvd	No Work
Dawson Creek	Mouth to Kenilworth Blvd	Concrete-Line: 20'BW, 1V on 3H SS
	Kenilworth Blvd to Hundred Oaks Drive	No Work
Bayou Duplantier	Mouth to Darymple Drive	No Work
PLAN WCC-P4A2 --	Earthen and Concrete Improvements	
Ward Creek	Mouth to 4000 ft upstream	No Work
	4000 ft upstream to 1200 ft u/s Pecue Lane	Minimal Clearing & Snagging
	1200 ft u/s Pecue Lane to Siegen Lane	No Work: 150' BW by Developer made, Siegen Br replaced
	Siegen Ln to Corporate Limits	Minimal Clearing & Snagging
	Corporate Limits to Choctaw Drive	Clear Existing Concrete Channels
North Br Ward Ck	Mouth to I-12	Concrete-Line: 32'BW, 1V on 3H SS
	I-12 to Florida Blvd	No Work
Dawson Creek	Mouth to Kenilworth Blvd	No Work
	Kenilworth Blvd to Hundred Oaks Drive	No Work
Bayou Duplantier	Mouth to Darymple Drive	No Work

TABLE C-1-21 (Continued)
WARD CREEK AND TRIBUTARIES
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
PLAN WCC-P4A3 -- Earthen and Concrete Improvements		
Ward Creek	Mouth to 4000 ft upstream	No Work
	4000 ft upstream to 1200 ft u/s Pecue Lane	Minimal Clearing & Snagging
	1200 ft u/s Pecue Lane to Siegen Lane	No Work: 150' BW by Developer made, Siegen Br replaced
	Siegen Ln to Mouth of North Br Ward Ck	Minimal Clearing & Snagging
	North Br Ward Ck to Choctaw Drive	No Work
North Br Ward Ck	Mouth to I-12	Concrete-Line: 32'BW, 1V on 3H SS
	I-12 to Florida Blvd	No Work
Dawson Creek	Mouth to Kenilworth Blvd	Concrete-Line: 20'BW, 1V on 3H SS
	Kenilworth Blvd to Hundred Oaks Drive	No Work
Bayou Duplantier	Mouth to Darymple Drive	No Work
PLAN WCC-P4A4 -- Earthen and Concrete Improvements		
Ward Creek	Mouth to 4000 ft upstream	No Work
	4000 ft upstream to 1200 ft u/s Pecue Lane	Minimal Clearing & Snagging
	1200 ft u/s Pecue Lane to Siegen Lane	No Work: 150' BW by Developer made, Siegen Br replaced
	Siegen Ln to Mouth of North Br Ward Ck	Minimal Clearing & Snagging
	North Br Ward Ck to Choctaw Drive	No Work
North Br Ward Ck	Mouth to I-12	Concrete-Line: 32'BW, 1V on 3H SS
	I-12 to Florida Blvd	No Work
Dawson Creek	Mouth to Kenilworth Blvd	No Work
	Kenilworth Blvd to Hundred Oaks Drive	No Work
Bayou Duplantier	Mouth to Darymple Drive	No Work

TABLE C-1-21 (Continued)
WARD CREEK AND TRIBUTARIES
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
PLAN WCC-P4A5 -- Earthen and Concrete Improvements		
Ward Creek	Mouth to 4000 ft upstream	No Work
	4000 ft upstream to 1200 ft u/s Pecue Lane	Minimal Clearing & Snagging
	1200 ft u/s Pecue Lane to Siegen Lane	No Work: 150' BW by Developer made, Siegen Br replaced
	Siegen Ln to Corporate Limits	Minimal Clearing & Snagging
	Corporate Limits to Choctaw Drive	No Work
North Br Ward Ck	Mouth to I-12	Concrete-Line: 32'BW, 1V on 3H SS
	I-12 to Florida Blvd	No Work
Dawson Creek	Mouth to Kenilworth Blvd	Minimal Clearing & Snagging
	Kenilworth Blvd to Hundred Oaks Drive	No Work
Bayou Duplantier	Mouth to Darymple Drive	No Work
PLAN WCC-P4A6 -- Earthen and Concrete Improvements		
Ward Creek	Mouth to 4000 ft upstream	No Work
	4000 ft upstream to 1200 ft u/s Pecue Lane	Minimal Clearing & Snagging
	1200 ft u/s Pecue Lane to Siegen Lane	No Work: 150' BW by Developer made, Siegen Br replaced
	Siegen Ln to Corporate Limits	Minimal Clearing & Snagging
	Corporate Limits to Choctaw Drive	No Work
North Br Ward Ck	Mouth to I-12	Concrete-Line: 32'BW, 1V on 3H SS
	I-12 to 1800 ft u/s of Old Hammond Hwy	Concrete-Line: 20'BW, 1V on 3H
Dawson Creek	Mouth to Kenilworth Blvd	Minimal Clearing & Snagging
	Kenilworth Blvd to Hundred Oaks Drive	No Work
Bayou Duplantier	Mouth to Darymple Drive	No Work

Tentatively Selected Plan -- Ward Creek and Tributaries

C.1.92. Plan WCC-P4A5 is the tentatively selected plan (TSP). Plate C-4, which is a map of Ward Creek and its tributaries, also shows the proposed channel improvements of the recommended plan. Plates C-16 to C-23 provide the existing conditions and with-project conditions flowlines for the 25-yr and 100-yr events and also shows the extent of the channel improvements. Stage-frequency curves for existing and with-project conditions are provided as Plates C-55 to C-65. Overflow

maps for the Ward Creek watershed denoting the existing conditions and with project conditions 25-yr floodplains are provided in Appendix F. The following table summarizes the stage reductions for the TSP at key points along Ward Creek.

TABLE C-1-22
WARD CREEK AND TRIBUTARIES
PROJECT STAGE REDUCTIONS (FEET)

WITH AND WITHOUT COMITE RIVER DIVERSION

Ward Creek

Event	Barringer Foreman Rd	Siegen Lane	N. Branch Ward Creek	Corporate Blvd	Government Street
1-YR	0.0	0.0	0.6	0.9	0.0
2-YR	0.0	0.0	0.6	0.8	0.0
5-YR	0.0	0.0	0.6	0.7	0.0
10-YR	0.0	0.0	0.6	0.6	0.0
25-YR	0.0	0.0	0.4	0.5	0.0
50-YR	0.0	0.0	0.4	0.5	0.0
100-YR	0.0	0.0	0.3	0.4	0.0
200-YR	0.0	0.0	0.2	0.4	0.0
500-YR	0.0	0.0	0.2	0.3	0.0

North Branch Ward Creek

Event	Mouth	I-12	Old Hammond Highway	Florida Blvd
1-YR	0.6	5.8	0.0	0.0
2-YR	0.6	5.4	0.0	0.0
5-YR	0.6	4.9	0.0	0.0
10-YR	0.6	4.7	0.0	0.0
25-YR	0.4	4.6	0.0	0.0
50-YR	0.4	4.5	0.0	0.0
100-YR	0.3	4.5	0.0	0.0
200-YR	0.2	4.4	0.0	0.0
500-YR	0.2	4.2	0.0	0.0

Dawson Creek

Event	Mouth	Bluebonnet Street	Moss Side Lane
1-YR	0.5	0.2	0.2
2-YR	0.5	0.2	0.2
5-YR	0.4	0.2	0.1
10-YR	0.3	0.2	0.1
25-YR	0.3	0.2	0.0
50-YR	0.3	0.2	0.0
100-YR	0.2	0.2	0.0
200-YR	0.2	0.2	0.0
500-YR	0.2	0.2	0.0

TABLE C-1-22 (Continued)
WARD CREEK AND TRIBUTARIES
PROJECT STAGE REDUCTIONS (FEET)

Bayou Duplantier

Event	Mouth	College (Lee) Drive	Stanford Avenue
1-YR	0.4	0.4	0.4
2-YR	0.4	0.4	0.4
5-YR	0.4	0.4	0.4
10-YR	0.3	0.3	0.3
25-YR	0.3	0.3	0.3
50-YR	0.3	0.3	0.3
100-YR	0.2	0.2	0.2
200-YR	0.2	0.2	0.2
500-YR	0.2	0.2	0.2

CLAY CUT BAYOU

General

C.1.93. Clay Cut Bayou, a tributary of the Amite River, has a drainage area of 15.0 square miles. The stream originates just south of the Baton Rouge city limits and flows southeastward, changing to eastward near the U.S. Highway 61 bridge (see Plate C-5). The flodplain is relatively narrow in the developed areas along the stream's headwaters and broadens considerably farther downstream near the mouth. Jacks Bayou is the largest tributary of Clay Cut Bayou with a drainage area of 1.1 square miles. Jacks Bayou joins Clay Cut Bayou at about Mile 7.0.

C.1.94. Since January 1957, the State of Louisiana, Department of Public Works, the City of Baton Rouge , and the East Baton Rouge Parish Department of Public Works have made channel improvements on Clay Cut Bayou and Jacks Bayou. On Clay Cut Bayou, the improved channel extends from its mouth at the Amite River to Floynell Drive at about Mile 10. The Jacks Bayou channel improvement extends from its mouth to Sherwood Forest Blvd, a distance of about 2 miles.

Hydraulic Analysis

C.1.95. There are two U.S.G.S. stream gages on Clay Cut Bayou. There are no gages on Jacks Bayou. Their locations and period of records are provided in Table C-1-7.

C.1.96. The January 1979 East Baton Rouge Parish Flood Insurance Study used this gage information and historical documents to develop flowlines for the 10-yr, 100-yr, and 500-yr flood events. The limits of that study were from the mouth to Inswald Road. New cross-sectional data was taken in 1986 at all bridges between the mouth and Inswald Road. A HEC-2 model was developed using this cross=section data and was calibrated to approximate the FIS flowlines. Clay Cut Bayou discharges

into the Amite River at about Mile 41. As part of the January 1990 Amite River and Tributaries, Comite River Basin Feasibility Report, flowlines for various flood events were developed for the Amite River. The resulting stage-frequency curve was used to supply the starting water surface elevations for the Clay Cut Bayou HEC-2 model. The following tables provide the existing conditions stages for the Clay Cut Bayou watershed resulting from the HEC-2 model.

TABLE C-1-23
CLAY CUT BAYOU AND JACKS BAYOU
EXISTING CONDITIONS STAGES (FT NGVD)

WITHOUT COMITE RIVER DIVERSION

Clay Cut Bayou

Event	Mouth	Tiger Bend Rd	Elliot Road	Jacks Bayou	Floynell Drive	Bluebonnet Drive
1-YR	14.3	14.9	16.5	23.3	28.2	30.7
2-YR	17.2	17.4	18.1	24.2	29.2	31.5
5-YR	20.2	20.3	20.5	25.3	30.1	32.8
10-YR	22.3	22.3	22.5	26.3	30.9	32.9
25-YR	23.4	23.4	23.5	27.1	31.6	33.0
50-YR	24.9	24.9	25.0	27.6	32.3	33.1
100-YR	26.0	26.0	26.0	27.9	32.5	33.2
200-YR	26.7	26.7	26.7	28.5	33.0	33.3
500-YR	27.5	27.5	27.6	29.0	33.6	33.7

WITH COMITE RIVER DIVERSION

Clay Cut Bayou

Event	Mouth	Tiger Bend Rd	Elliot Road	Jacks Bayou	Floynell Drive	Bluebonnet Drive
1-YR	14.1	14.7	16.3	23.3	28.2	30.7
2-YR	17.0	17.2	17.9	24.2	29.2	31.5
5-YR	19.6	19.7	20.0	25.3	30.1	32.8
10-YR	21.8	21.8	22.0	26.3	30.9	32.9
25-YR	23.1	23.1	23.2	27.1	31.6	33.0
50-YR	24.2	24.2	24.3	27.6	32.3	33.1
100-YR	24.9	24.9	25.0	27.9	32.5	33.2
200-YR	26.3	26.3	26.3	28.5	33.0	33.3
500-YR	26.9	26.9	27.0	29.0	33.6	33.7

WITH AND WITHOUT COMITE RIVER DIVERSION

Jacks Bayou

Event	Tiger Bend Road	Stumberg Lane	Sherwood Forest Blvd
1-YR	23.5	29.4	39.1
2-YR	24.5	29.9	39.6
5-YR	25.6	30.4	40.1
10-YR	26.6	31.1	40.6
25-YR	27.3	31.5	40.8
50-YR	27.8	32.2	41.1
100-YR	28.3	32.6	41.3
200-YR	28.7	32.9	41.5
500-YR	29.3	33.4	41.8

C.1.97. The following table provides the discharges used for the existing conditions modelling. The development of these discharges is discussed in the Hydrologic Modelling Section.

TABLE C-1-24
CLAY CUT BAYOU AND JACKS BAYOU
EXISTING CONDITIONS DISCHARGES (CFS)

Clay Cut Bayou

Event	Mouth	Boggy Cut Bayou	Jacks Bayou	Siegen Lane	Dove Creek Apts
1-YR	3,340	2,730	2,070	1,510	520
2-YR	3,950	3,240	2,450	1,790	610
5-YR	4,660	3,810	2,920	2,130	720
10-YR	5,540	4,480	3,430	2,570	870
25-YR	6,530	5,230	4,010	2,860	980
50-YR	7,500	5,950	4,560	3,330	1,050
100-YR	8,410	6,610	5,070	3,690	1,180
200-YR	9,850	7,520	5,750	4,160	1,330
500-YR	1,2100	8,840	6,780	4,840	1,480

Jacks Bayou

Event	Mouth	Stumberg Lane	Sherwood Forest Blvd
1-YR	630	570	330
2-YR	750	680	400
5-YR	900	820	480
10-YR	1,090	990	580
25-YR	1,200	1,090	640
50-YR	1,400	1,270	740
100-YR	1,550	1,410	810
200-YR	1,730	1,570	910
500-YR	2,020	1,840	1,030

Alternatives

C.1.98. Backwater effects of the Amite River extend upstream to Elliot Road. The existing channel utilizes all of the available right-of-way with a 25 foot servitude on each side of the channel. These limitations restricted the amount of channel improvement that could be studied for this channel to concrete lining of the existing channel with a minimum of shaping of the channel to a trapezoidal section. The concrete lining extended from Elliot Road to Bluebonnet Drive. Earlier channel improvements along the entire length of Jacks Bayou has provided an existing level of protection to the 50-yr event. Therefore, no further channel improvement was considered for Jacks Bayou.

C.1.99. As an alternative to concrete lining of the channel, channel enlargement by making a verticle cut at the top of banks was considered. This plan consisted of making a 3-foot deep gabion supported verticle

cut at the top of banks. In addition, bank paving with gabions at a 1 on 3 side slope extending from the toe of the verticle cut to a gabion lined channel bottom was included in this plan. The gabions would be covered with an asphalt mastic to achieve a Manning's 'n' value approximately equal to that of concrete.

C.1.100. An alternative was studied which involved leveeing Clay Cut Bayou from the Amite River with a pumping station and/or floodgates to evacuate interior runoff. That alternative, however, was not cost effective.

C.1.101. No cost effective plan was identified for this watershed. Profile plots for the 25-yr and 100-yr events for existing conditions are provided as Plates C-24 and C-25. Stage-frequency curves for sevevral locations in the watershed are provided as Plates C-66 to C-70. Overflow maps for the Clay Cut Bayou watershed denoting the existing conditions 10-yr floodplain are provided on Plates in Appendix F.

JONES CREEK AND TRIBUTARIES

General

C.1.102. Jones Creek is a tributary of the Amite River and along with its tributaries has a total drainage area of 26.4 square miles, all within East Baton Rouge Parish. The stream's headwaters originate in the east-central portion of Baton Rouge. The channel flows southeastward from the city, changing to eastward as it approaches the Amite River. Its principal tributaries are Weiner Creek, Lively Bayou and Lively Bayou Tributary, and Jones Creek Tributary (see Plate C-6).

C.1.103. The Weiner Creek tributary discharges into Jones Creek at about Mile 4.5. The stream has a drainage area of 2.8 square miles. Lively Bayou is the largest tributary to Jones Creek, with a drainage area of 6.0 square miles. Lively Bayou discharges into Jones Creek at about Mile 6.4. Its main tributary of Lively Bayou Tributary has a drainage area of 1.4 square miles which discharges into Lively Bayou about 1/2 mile above the mouth. Jones Creek Tributary enters Jones Creek at about Mile 9.8 and has a drainage area of 1.4 square miles.

C.1.104. The last known channel improvement in this watershed was done on the Lively Bayou Tributary from the Illinois Central Railroad to Florida Blvd in 1966. Prior to then, Lively Bayou Tributary was improved from its mouth to the Illinois Central Railroad. Also prior to 1966, Jones Creek was improved from its mouth to its headwaters, a distance of 12.6 miles, and Lively Bayou was improved from its mouth to the Illinois Central Railroad, a distance of 3.5 miles. In addition, more than half of the 3.2 miles of Weiner Creek were improved, including a diversion adjacent to the Lake Sherwood Acres subdivision.

Hydraulic Analysis

C.1.105. There are several U.S.G.S. gages located throughout the Jones Creek watershed. Their location and period of record are shown in the Table C-1-7.

C.1.106. The January 1979 East Baton Rouge Parish Flood Insurance Study used the above gage information and historical records to develop flowlines for the following stream reaches and events.

TABLE C-1-25
JONES CREEK AND TRIBUTARIES
EAST BATON ROUGE PARISH FIS, JANUARY 1979

Stream	Limits of Study	Events
Jones Creek	Mouth to Airline Highway	10-YR, 100-YR, 500-YR
Weiner Creek	Mouth to Interstate-12	100-YR, 500-YR
Lively Bayou	Mouth to ICC Railroad	10-YR, 100-YR, 500-YR
Lively Bayou Trib	Mouth to Choctaw Drive	100-YR, 500-YR

C.1.107. For this study, new cross-sectional data was taken at all bridges and major tributaries over the same limits as the 1979 FIS. In addition, three cross-sections were taken on Jones Creek Tributary. HEC-2 models were developed for each stream using the 1986 cross-section data and then calibrated to approximate the 1979 FIS flowlines. As part of the January 1990 Amite River and Tributaries, Comite River Basin Feasibility Study, flowlines for the range of flood events were developed along the Amite River. This source provided the starting water surface elevations for Jones Creek and tributaries HEC-2 model. The following tables provide the existing conditions stages for Jones Creek and tributaries resulting from the HEC-2 model.

TABLE C-1-26
JONES CREEK AND TRIBUTARIES
EXISTING CONDITIONS STAGES (FT. NGVD)

WITHOUT COMITE RIVER DIVERSION

Jones Creek

Event	Mouth	Jones Creek Rd	South Harrell's Ferry Rd	US 190	Airway Drive	Woodlake Blvd
1-YR	20.7	24.8	32.1	42.2	47.4	51.1
2-YR	22.9	26.4	33.3	43.1	48.2	51.2
5-YR	25.4	28.4	34.6	44.4	49.1	51.7
10-YR	27.7	29.9	35.8	45.3	50.0	51.8
25-YR	28.8	31.4	36.9	46.2	50.7	52.2
50-YR	30.6	32.4	37.6	47.0	51.1	52.5
100-YR	31.7	33.4	38.2	47.5	51.4	52.7
200-YR	32.9	34.3	38.6	48.0	51.8	53.1
500-YR	33.6	35.4	39.4	48.4	52.1	53.5

TABLE C-1-26 (Continued)
JONES CREEK AND TRIBUTARIES
EXISTING CONDITIONS STAGES (FT. NGVD)

WITH COMITE RIVER DIVERSION

Jones Creek

Event	Mouth	Jones Creek Rd	South Harrell's Ferry Rd	US 190	Airway Drive	Woodlake Blvd
1-YR	20.4	24.6	32.1	42.2	47.4	51.1
2-YR	22.5	26.2	33.3	43.1	48.2	51.2
5-YR	24.9	28.0	34.6	44.4	49.1	51.7
10-YR	27.0	29.7	35.8	45.3	50.0	51.8
25-YR	28.4	30.8	36.9	46.2	50.7	52.2
50-YR	29.7	31.9	37.6	47.0	51.1	52.5
100-YR	30.5	32.6	38.2	47.5	51.4	52.7
200-YR	32.0	33.8	38.6	48.0	51.8	53.1
500-YR	32.8	34.9	39.4	48.4	52.1	53.5

WITH AND WITHOUT COMITE RIVER DIVERSION

Weiner Creek and Jones Creek Tributary

	Weiner Creek		Jones Ck. Trib.	
Event	Stanley Aubin Lane	Crest Ave	W. Tams Drive	Darryl Drive
1-YR	42.0	42.8	44.2	45.7
2-YR	42.4	43.1	45.2	46.7
5-YR	42.8	43.4	46.4	47.8
10-YR	43.1	43.8	47.7	48.7
25-YR	43.4	44.0	48.4	49.1
50-YR	43.7	44.3	49.2	49.6
100-YR	44.0	44.5	49.6	49.7
200-YR	44.4	44.8	50.1	50.3
500-YR	44.8	45.2	50.5	50.6

Lively Bayou and Tributary

			Lively Bayou Tributary		
Event	Old Hammond Highway	Flannery Road	Goodwood Blvd	US 190	Tams Drive
1-YR	34.9	40.8	36.3	41.9	43.7
2-YR	36.3	41.6	37.5	42.9	44.5
5-YR	37.4	42.6	38.6	43.9	45.5
10-YR	38.4	43.4	39.7	45.0	46.4
25-YR	38.9	43.9	40.2	45.6	46.6
50-YR	39.8	44.4	41.2	46.0	46.9
100-YR	40.4	44.7	41.7	46.1	47.1
200-YR	40.8	45.1	42.2	46.2	47.2
500-YR	41.6	45.4	42.8	46.3	47.5

C.1.108. The following table provides the discharges used for the existing conditions modelling. The development of these discharges is discussed in the Hydrologic Modelling Section.

TABLE C-1-27
JONES CREEK AND TRIBUTARIES
EXISTING CONDITIONS DISCHARGES (CFS)

Jones Creek

Event	Mouth	Weiner Creek	I-12	Lively Bayou	Florida Blvd	Jones Creek Trib
1-YR	5,050	4,750	4,450	2,420	1,790	1,150
2-YR	6,000	5,700	5,350	2,890	2,150	1,390
5-YR	7,180	6,810	6,360	3,460	2,590	1,670
10-YR	8,540	8,020	7,450	4,080	3,080	2,010
25-YR	10,100	8,790	8,240	4,480	3,430	2,240
50-YR	11,600	10,700	9,990	5,450	4,030	2,610
100-YR	13,000	11,900	11,200	6,060	4,500	2,920
200-YR	14,800	13,300	12,500	6,900	5,100	3,290
500-YR	18,600	15,800	14,900	8,050	5,960	3,840

Weiner Creek and Jones Creek Tributary

	Weiner Creek		Jones Ck Tributary	
Event	Mouth	Stanley Aubin Ln	Mouth	Gerald Drive
1-YR	1,560	560	680	70
2-YR	1,880	670	810	90
5-YR	2,240	800	990	110
10-YR	2,700	960	1,200	130
25-YR	3,000	1,070	1,330	140
50-YR	3,510	1,250	1,550	170
100-YR	3,920	1,400	1,720	180
200-YR	4,450	1,590	1,950	210
500-YR	5,160	1,840	2,250	240

Lively Bayou and Tributary

					Lively B. Trib.	
Event	Mouth	Lively B. Trib.	Honey Cut Bayou	Flannery Road	Mouth	Florida Blvd
1-YR	1,820	1,430	1,130	1,030	970	520
2-YR	2,180	1,730	1,370	1,230	1,180	630
5-YR	2,600	2,100	1,670	1,460	1,410	760
10-YR	3,050	2,500	2,010	1,740	1,700	910
25-YR	3,600	2,800	2,240	1,940	1,880	1,010
50-YR	4,100	3,300	2,610	2,270	2,190	1,170
100-YR	4,610	3,670	2,920	2,520	2,440	1,310
200-YR	5,200	4,150	3,330	2,830	2,750	1,470
500-YR	6,130	4,850	3,840	3,290	3,190	1,710

ALTERNATIVES

Channel Improvement

C.1.109. For this watershed, the soil erodability problems mentioned previously exist (see F&M Br report). As a result, the channel improvement alternatives developed for this watershed involved primarily concrete-lining of the channel. Because the backwater effects of the Amite River extend from the mouth of Jones Creek to Jones Creek Road, channel improvements in this reach were limited to clearing and snagging. In addition, no improvements were analyzed for Jones creek Tributary. That stream does not meet the criteria for Federal participation under flood control authorities (i.e., 10-year frequency discharge is not greater than 800 cfs). The following table gives pertinent data about the channel improvement alternatives.

TABLE C-1-28
JONES CREEK AND TRIBUTARIES
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
Plan JCCL-P1 -- Concrete-Line Jones Creek and Tributaries		
Jones Creek	Mouth to Jones Creek Rd	Clear & Snag
	Jones Creek Rd to Lobdell Blvd	5' BW: 1V on 3H SS
Weiner Creek	Mouth to Cedar Crest Ave.	5' BW: 1V on 3H SS
Lively Bayou	Mouth to Ill. Central RR	5' BW: 1V on 3H SS
Lively Bayou Trib.	Mouth to Tams Drive	5' BW: 1V on 3H SS
Jones Creek Trib.	Mouth to Darryl Drive	No work

Stream	Reach	Type of Improvement
Plan JCCL-P2 -- Concrete-Line Jones Creek and Tributaries		
Jones Creek	Mouth to Jones Creek Rd.	Clear & Snag
	Jones Ck. Rd. to South Harrells Ferry Rd	10' BW: 1V on 3H SS
	S. Harrells Ferry Rd to Sherwood Forest Blvd	15' BW: 1V on 3H SS
	Sherwood Forest Blvd to	10' BW: 1V on 3H SS
	Molly Lee Dr to Sharp Rd	15' BW: 1V on 3H SS
	Sharp Rd to Cuyhanga Pkwy	20' BW: 1V on 3H SS
	Cuyhanga Pkwy – Lobdell Blvd	5' BW: 1V on 3H SS
Weiner Creek	Mouth to Sherwood Drive	5' BW: 1V on 3H SS
	Sherwood Dr to Stanley Aubin Lane	30' BW: 1V on 3H SS
	Stanley Aubin Ln to Cedar Crest Ave	20' BW: 1V on 3H SS
Lively Bayou	Mouth to Mile 2.3	20' BW: 1V on 3H SS
	Mile 2.3 to Mile 3.2	30' BW: 1V on 3H SS
	Mile 3.2 to Ill. Central RR	35' BW: 1V on 3H SS
Lively Bayou Trib.	Mouth to Tams Drive	5' BW: 1V on 3H SS
Jones Creek Trib.	Mouth to Daryl Drive	No work

TABLE C-1-28 (Continued)
JONES CREEK AND TRIBUTARIES
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
Plan JCCL-P3 -- Concrete-Line Jones Creek Only		
Jones Creek	Mouth to Jones Creek Rd	Clear & Snag
	Jones Creek Rd to Lobdell Blvd	5' BW; 1V on 3H SS
Weiner Creek	Mouth to Cedar Crest Ave.	No Work
Lively Bayou	Mouth to Ill. Central RR	No Work
Lively Bayou Trib.	Mouth to Tams Drive	No Work
Jones Creek Trib.	Mouth to Darryl	No Work
Plan JCCL-P4 -- Concrete-Line Jones Creek Only		
Jones Creek	Mouth to Jones Creek Rd.	Clear & Snag
	Jones Ck. Rd. to South Harrells Ferry Rd	10' BW: 1V on 3H SS
	S. Harrells Ferry Rd to Sherwood Forest Blvd	15' BW: 1V on 3H SS
	Sherwood Forest Blvd to	10' BW: 1V on 3H SS
	Molly Lee Drive to Sharp Rd	15' BW: 1V on 3H SS
	Sharp Rd to Cuyhanga Pkwy	20' BW: 1V on 3H SS
	Cuyhanga Pkwy to Lobdell Blvd	5' BW: 1V on 3H SS
Weiner Creek	Mouth to Cedar Crest Ave.	No Work
Lively Bayou	Mouth to Ill. Central RR	No Work
Lively Bayou Trib.	Mouth to Tams Drive	No Work
Jones Creek Trib.	Mouth to Darryl	No Work

Tentatively Selected Plan - Jones Creek and Tributaries

C.1.110. The tentatively selected plan (TSP) for Jones Creek and Tributaries is Plan JCCL-P1 which provides concrete-lining of both the main channel and its tributaries except for Jones Creek Tributary. Plate C-6, which is a map of Jones Creek and its tributaries, also shows the proposed channel improvements of the recommended plan. Plates C-26 to C-35 shows the extent of the channel improvements along with the existing conditions and with-project conditions flowlines for the 25-yr and 100-yr events. Stage-frequency curves at several locations in the watershed for existing and with-project conditions are provided as Plates C-71 to C-78. Overflow maps for the Jones Creek watershed denoting the existing conditions and with project conditions 100-yr floodplains are provided on plates in Appendix F. The following table provides the stage reductions of the TSP for the channels at key points.

TABLE C-1-29
JONES CREEK AND TRIBUTARIES
PLAN JCCL-P1 CONCRETE-LINED CHANNEL
PROJECT STAGE REDUCTIONS (FT)

WITHOUT COMITE RIVER DIVERSION

Jones Creek

Event	Jones Creek Rd	S. Harrells Ferry Rd	US 190	Airway Drive	Woodlake Blvd
1-YR	3.8	5.6	4.8	6.8	4.5
2-YR	3.2	5.8	5.0	6.9	4.0
5-YR	2.8	5.9	5.6	7.1	3.6
10-YR	2.5	5.7	5.8	7.2	2.7
25-YR	2.2	5.5	6.1	7.4	2.1
50-YR	1.7	5.2	6.0	6.9	1.6
100-YR	1.6	5.2	6.0	6.6	1.3
200-YR	1.3	4.1	5.7	6.1	1.1
500-YR	1.0	3.8	5.0	5.3	1.0

WITH COMITE RIVER DIVERSION

Jones Creek

Event	Jones Creek Rd	S. Harrells Ferry Rd	US 190	Airway Drive	Woodlake Blvd
1-YR	4.0	6.5	4.8	6.8	4.5
2-YR	3.5	6.7	5.0	6.9	4.0
5-YR	2.9	6.8	5.6	7.1	3.6
10-YR	2.5	6.6	5.8	7.2	2.7
25-YR	2.2	6.3	6.1	7.4	2.1
50-YR	1.8	6.0	6.0	6.9	1.6
100-YR	1.9	5.7	6.0	6.6	1.3
200-YR	1.6	4.9	5.7	6.1	1.1
500-YR	1.6	4.5	5.0	5.3	1.0

WITH AND WITHOUT COMITE RIVER DIVERSION

Weiner Creek and Jones Creek Tributary

	Weiner Creek		Jones Creek Trib.	
Event	Stanley Aubin Ln	Cedar Crest Ave	W. Tams Drive	Darryl Drive
1-YR	3.9	3.6	3.0	1.2
2-YR	4.1	3.4	3.6	1.6
5-YR	4.2	3.2	4.2	2.0
10-YR	4.2	3.1	4.9	2.1
25-YR	4.2	3.1	5.2	2.1
50-YR	4.3	2.9	5.4	2.0
100-YR	4.3	2.8	5.4	2.0
200-YR	4.4	2.7	5.2	1.8
500-YR	4.5	2.7	4.7	1.6

TABLE C-1-29 (Continued)
JONES CREEK AND TRIBUTARIES
PLAN JCCL-P1 CONCRETE-LINED CHANNEL
PROJECT STAGE REDUCTIONS (FT)

Lively Bayou and Tributary

	Lively Bayou		Lively Bayou Tributary		
Event	Old Hammond Highway	Flannery Road (near ILC RR)	Goodwood Blvd	Florida US 190	Tams Drive
1-YR	6.4	2.6	4.0	4.3	3.1
2-YR	6.8	3.0	4.7	4.7	3.6
5-YR	6.7	3.5	5.2	5.2	4.5
10-YR	6.4	3.8	5.5	5.6	5.2
25-YR	6.1	3.9	5.4	5.9	5.3
50-YR	5.4	3.8	5.3	5.7	5.3
100-YR	4.9	3.6	5.0	5.3	5.3
200-YR	4.2	3.3	4.5	4.9	5.2
500-YR	3.6	2.6	3.8	3.9	5.0

BEAVER BAYOU

General

C.1.111. Beaver Bayou has a total drainage area of 12.5 square miles and is a tributary of the Comite River. Its headwaters begin above Denham Road and flows southward to its confluence with the Comite River at Mile 3.6. Beaver Bayou has two major tributaries: Beaver Bayou Lateral and what will be referred to in this study as Tributary #2 (see Plate C-7). Beaver Bayou is located east of the Baton Rouge city limits and is not heavily urbanized. The reach from its mouth to Frenchtown Road is a winding stream that is influenced heavily by backwater stages from the Comite River.

C.1.112. In 1982, the City of Baton Rouge and the Parish of East Baton Rouge, Department of Public Works proposed a three phase channel improvement plan for Beaver Bayou. Phase I extends from the mouth of Beaver Bayou to Greenwell Springs Road. Phases II and III extend from Greenwell Springs Road to Wax Road and from Wax Road to Hooper Road, respectively. Phase I consists of channel enlargement, deepening, and straightening. Phase I was later broken into two parts, Phase IA and Phase IB. Phase IA extends from the mouth of Beaver Bayou to Frenchtown Road, a distance of 2.3 miles. Phase IB extends from Frenchtown Road to Greenwell Springs Road.

C.1.113. Phase IA originally called for deepening the channel by 2.5 feet at the mouth of Beaver Bayou (elevation 15.5 ft NGVD) to 4.0 feet at Frenchtown Road (elevation 20.0 ft NGVD). The channel would have been enlarged to a trapezoidal channel with a 60 foot bottom width and 2.5 on 1 side slopes. The channel length would have been reduced 500 feet by straightening a portion of the stream. However, during construction of Phase IA, a large degree of bank sloughing and backwater siltation from the Comite River occurred. As a result, Phase IA was

modified. The existing channel invert at the mouth (18.0 ft NGVD) was retained. The channel was then excavated to 18.0 feet NGVD from the mouth to the point upstream where it intersected the original proposed channel invert. The bottom width and side slopes remained unchanged. This modified Phase IA was completed in 1989.

Hydraulic Analysis

C.1.114. There are three U.S.G.S. stream gages located within the Beaver Bayou watershed. Their locations and period of records are provided in Table C-1-7.

C.1.115. The November 1985 East Baton Rouge Parish Flood Insurance Study used this gage information and hydraulic characteristics of the streams in the local community to provide estimates of the elevations of floods for the 10-yr, 50-yr, 100-yr, and 500-yr events. The limits of the study were from its mouth to Hubbs Road. HEC-2 models of Beaver Bayou Lateral and Tributary #2 were also developed as part of the FIS but were not included in the FIS report. Channel cross-sections were taken as part of the aCity of Baton Rouge, Department of Public Works' proposed channel improvement plan. This cross-section data, which extends from the mouth of Beaver Bayou to Wax Road, was incorporated into the FIS HEC-2 model. As part of the January 1990 Amite River and Tributaries, Comite River Basin Feasibility Study, flowlines were developed for various flood events for the Comite River. The resulting stage-frequency curves were used to supply the starting water surface elevations for the Beaver Bayou HEC-2 model for this study. The following tables provide the existing conditions stages for the Beaver Bayou watershed resulting from the HEC-2 model.

TABLE C-1-30
BEAVER BAYOU AND TRIBUTARIES
EXISTING CONDITIONS STAGES (FT NGVD)

WITHOUT COMITE RIVER DIVERSION

Beaver Bayou - Pre-Phase IA

Event	Mouth	Frenchtown Road	Greenwell Springs Rd	Wax Road	Hooper Road	Denham Road
1-YR	34.0	36.3	49.2	57.0	62.7	71.5
2-YR	35.9	37.2	49.7	57.5	63.0	71.7
5-YR	38.4	38.9	50.4	57.9	63.4	72.0
10-YR	40.4	40.6	50.9	58.2	63.6	72.2
25-YR	42.9	43.0	51.6	58.6	63.9	72.4
50-YR	44.7	44.8	52.1	58.8	64.1	72.6
100-YR	46.1	46.2	52.5	59.1	64.3	72.8
200-YR	47.1	47.2	52.8	59.3	64.5	72.9
500-YR	48.0	48.1	53.1	59.4	64.7	73.0

TABLE C-1-30 (Continued)
BEAVER BAYOU AND TRIBUTARIES
EXISTING CONDITIONS STAGES (FT NGVD)

Beaver Bayou - With Phase IA

Event	Mouth	Frenchtown Road	Greenwell Springs Rd	Wax Road
1-YR	34.0	34.4	47.8	57.0
2-YR	35.9	36.2	48.7	57.5
5-YR	38.4	38.5	49.5	57.9
10-YR	40.4	40.5	49.7	58.2
25-YR	42.9	42.9	50.6	58.6
50-YR	44.7	44.7	51.2	58.8
100-YR	46.1	46.1	51.6	59.1
200-YR	47.1	47.1	51.9	59.3
500-YR	48.0	48.0	52.6	59.4

WITH COMITE RIVER DIVERSION

Beaver Bayou - With Phase IA

Event	Mouth	Frenchtown Road	Greenwell Springs Rd	Wax Road
1-YR	32.6	33.2	47.6	57.0
2-YR	35.0	35.4	48.4	57.5
5-YR	37.0	37.3	49.2	57.9
10-YR	39.8	39.8	49.7	58.2
25-YR	41.9	41.9	50.6	58.6
50-YR	43.6	43.6	51.1	58.8
100-YR	44.7	44.7	51.5	59.1
200-YR	45.7	45.8	51.8	59.3
500-YR	46.6	46.6	52.6	59.4

WITH AND WITHOUT COMITE RIVER DIVERSION

Beaver Bayou Lateral and Tributary #2

	Beaver Bayou Lateral			Tributary #2		
Event	Mouth	Devall Road	Near Puckett	Mouth	Devall Road	Near Core Ln
1-YR	60.5	61.8	68.3	64.7	67.1	72.0
2-YR	60.9	62.5	68.6	65.0	67.3	72.1
5-YR	61.4	63.3	68.9	65.2	67.4	72.2
10-YR	62.1	63.6	69.3	65.4	67.5	72.3
25-YR	62.3	63.9	69.4	65.6	67.7	72.4
50-YR	62.5	64.1	69.5	65.8	67.9	72.5
100-YR	62.7	64.3	69.6	66.0	68.0	72.6
200-YR	62.8	64.4	69.7	66.1	68.1	72.7
500-YR	63.0	64.5	69.8	66.3	68.3	72.9

C.1.116. The following table provides the discharges used for the existing conditions modelling. The development of these discharges is discussed in the Hydrologic Modeling Section.

TABLE C-1-31
BEAVER BAYOU AND TRIBUTARIES
EXISTING CONDITIONS DISCHARGES (CFS)

Beaver Bayou

Event	Mouth	Trib Near Trey Ave	Beaver B. Lateral	Trib North Hooper Rd	Denham Road
1-YR	3,400	2,480	1,790	1,030	780
2-YR	4,130	2,990	2,150	1,240	930
5-YR	4,900	3,570	2,560	1,470	1,120
10-YR	5,550	4,125	2,950	1,700	1,289
25-YR	6,650	4,860	3,460	1,980	1,500
50-YR	7,450	5,500	4,000	2,240	1,700
100-YR	8,400	6,160	4,400	2,490	1,890
200-YR	9,150	6,570	4,690	2,660	2,000
500-YR	10,250	7,435	5,300	2,970	2,250

Beaver Bayou Lateral and Tributary #2

Event	Beaver Bayou Lateral @ Mouth	Tributary #2 @ Mouth
1-YR	480	390
2-YR	580	470
5-YR	680	550
10-YR	700	630
25-YR	910	740
50-YR	1,030	830
100-YR	1,140	920
200-YR	1,200	970
500-YR	1,350	1,090

ALTERNATIVES

Channel Improvement

C.1.117. For Beaver Bayou, the soil erodability problems mentioned previously exist in this watershed (see F&M Br report). Earthen channel improvements will aggravate the channel bank stability and result in accelerated bank erosion and failures, thereby requiring some bank protection (geo-fabric and/or riprap). These improvements were analyzed and the cost of maintenance and additional real estate were included since residential development has not encroached on the existing banks as heavily as some other channels. Several channel improvement alternatives were developed for the Beaver Bayou and tributaries watershed. Since the backwater effects of the Comite River extend from the mouth of Beaver Bayou to a point approximately 2500 feet downstream of Greenwell Springs Road, channel improvements in this reach were limited to clearing and snagging. In general, the channel improvements upstream of Greenwell Springs Road were designed to contain headwater flows to within banks for tha design frequencies. The designs were evaluated with the streams' HEC-2 models utilizing all available right-of-ways and including some bridge improvements. Four levels of design were developed for this watershed; the 10-yr, 25-yr, 50-yr, and

100-yr channel improvement designs. Upon review of the results of these alternatives, it was determined that it would not be possible to contain the 100-yr event within banks. Even with extensive improvements, the 100-yr evenp would be out of banks for the entire stream length and was therefore eliminated from further study. No improvements were analyzed for Beaver Bayou Lateral and Tributary #2. Those streams do not meet the criteria for Federal participation under flood control authorities. (i.e., 10-year frequency discharge is not greater than 800 cfs). The 10-yr, 25-yr, and 50-yr channel designs required some bridge improvements. The improvements consisted of lengthening the bridges or replacing the bridges to accomodate the enlarged channel. The following table gives the pertinent data for the channel improvement alternatives.

TABLE C-1-32
BEAVER BAYOU AND TRIBUTARIES
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
Plan BBN-P1 -- 10-year Earthen Channel Design - Main Channel Only		
Beaver Bayou	Mouth to Frenchtown Road	No Work
	Frenchtown Rd to Greenwell Springs Rd	20' BW: 1V on 3.5H SS
	Greenwell Springs Rd to Wax Road	50' BW: 1V on 3.5H SS (lengthen Br 96 ft)
	Wax Rd to Hooper Rd	30' BW: 1V on 3.5H SS
	Hooper Rd to Denham Rd	20' BW: 1V on 3.5H SS
	Denham Rd to Hubbs Rd	5' BW: 1V on 3.5H SS
Beaver B. Lateral		No Work
Tributary #2		No Work
Plan BBN-P2 -- 25-year Earthen Channel Design - Main Channel Only		
Beaver Bayou	Mouth to Frenchtown Rd	No Work
	Frenchtown Rd to 2300 ft d/s Greenwell Springs Rd	20' BW: 1V on 3.5H SS
	2300 ft d/s Greenwell Spgs Rd to Greenwell Spgs Rd	50' BW: 1V on 3.5H SS (lengthen Br 90 ft)
	Greenwell Spgs Rd to Wax Rd	50' BW: 1V on 3.5H SS (lengthen Br 115 ft)
	Wax Rd to Hooper Rd	50' BW: 1V on 3.5H SS
	Hooper Rd to Denham Rd	30' BW: 1V on 3.5H SS
	Denham Rd to Hubbs Rd	5' BW: 1V on 3.5H SS
Beaver B. Lateral		No Work
Tributary #2		No Work

TABLE C-1-32 (Continued)
BEAVER BAYOU AND TRIBUTARIES
CHANNEL IMPROVEMENT ALTERNATIVES

Plan BBN-P3 -- 50-year Earthen Channel Design - Main Channel Only

Beaver Bayou	Mouth to Frenchtown Rd	No Work
	Frenchtown Rd to 2300 ft d/s Greenwell Springs Rd	20' BW: 1V on 3.5H SS
	2300 ft d/s Greenwell Spgs Rd to Greenwell Spgs Rd	50' BW: 1V on 3.5H SS (lengthen Br 90 ft)
	Greenwell Spgs Rd to Wax Rd	50' BW: 1V on 3.5H SS (lengthen Br 115 ft)
	Wax Rd to Hooper Rd	50' BW: 1V on 3.5H SS (lengthen Br 94 ft)
	Hooper Rd to Denham Rd	40' BW: 1V on 3.5H SS
	Denham Rd to Hubbs Rd	5' BW: 1V on 3.5H SS
Beaver B. Lateral		No Work
Tributary #2		No Work

Plan BBC-P4 -- Minimum Concrete Lined Channel - Main Channel Only

Beaver Bayou	Mouth to Frenchtown Rd	No Work
	Frenchtown Rd to 2300 ft d/s of Greenwell Spgs Rd	20' BW: 1V on 3H SS
	2300 ft d/s Greenwell Spgs Rd to Greenwell Spgs Rd	10' BW: 1V on 3H SS
	Greenwell Spgs Rd to Wax Rd	10' BW: 1V on 3H SS
	Wax Rd to Hooper Rd	10' BW: 1V on 3H SS
	Hooper Rd to Denham Rd	5' BW: 1V on 3H SS
	Denham Rd to Hubbs Rd	5' BW: 1V on 3H SS
Beaver B. Lateral		No Work
Tributary #2		No Work

Tentatively Selected Plan - Beaver Bayou and Tributaries

C.1.118. The tentatively selected plan (TSP) for Beaver Bayou and Tributaries is the 25-year earthen channel improvement (Plan BBN-P2). Plate C-7, which is a map of Beaver Bayou and its tributaries, shows the proposed channel improvements of the recommended plan. Plates C-36 to C-41 also show the extent of the channel improvement along with the existing conditions and with-project conditions flowlines for the 25-yr and 100-yr events. Stage-frequency curves for several locations in the watershed for existing and with-project conditions are provided as Plates C-79 to C-84. Overflow maps for the Beaver Bayou watershed denoting the existing conditions and with-project conditions 10-year floodplain are provided on plates in Appendix F. The following tables provide the stage reductions of the TSP for the channels at key points.

TABLE C-1-33
BEAVER BAYOU AND TRIBUTARIES
25-YR EARTHEN CHANNEL IMPROVEMENT
PROJECT STAGE REDUCTIONS (FT)

WITHOUT COMITE RIVER DIVERSION

Beaver Bayou - With-Phase IA

Event	Frenchtown Road	Greenwell Springs Rd	Wax Road	Hooper Road	Denham Road	Hubbs Road
1-YR	0.0	3.1	3.2	4.5	4.2	1.4
2-YR	0.0	3.1	3.0	4.1	3.8	1.4
5-YR	0.0	3.1	2.7	3.7	3.4	1.2
10-YR	0.0	3.0	2.7	3.2	3.1	1.1
25-YR	0.0	2.6	2.6	3.0	2.8	1.0
50-YR	0.0	2.6	2.6	2.6	2.5	0.8
100-YR	0.0	2.5	2.6	1.8	2.2	0.8
200-YR	0.0	2.2	2.3	1.3	2.1	0.8
500-YR	0.0	2.2	1.8	1.3	2.0	0.7

WITH COMITE RIVER DIVERSION

Beaver Bayou - With-Phase IA

Event	Frenchtown Road	Greenwell Springs Rd	Wax Road	Hooper Road	Denham Road	Hubbs Road
1-YR	0.0	3.1	3.2	4.5	4.2	1.4
2-YR	0.0	3.1	3.0	4.1	3.8	1.4
5-YR	0.0	3.2	2.7	3.7	3.4	1.2
10-YR	0.0	3.0	2.7	3.2	3.1	1.1
25-YR	0.0	3.2	2.6	3.0	2.8	1.0
50-YR	0.0	3.0	2.6	2.6	2.5	0.8
100-YR	0.0	2.7	2.6	1.8	2.2	0.8
200-YR	0.0	2.6	2.3	1.3	2.1	0.8
500-YR	0.0	2.6	1.8	1.3	2.0	0.7

WITH AND WITHOUT COMITE RIVER DIVERSION

Beaver Bayou Lateral and Tributary #2

	Beaver Bayou Lateral			Tributary #2		
Event	Mouth	Devall Road	Near Puckett	Mouth	Devall Road	Near Core Ln
1-YR	3.0	0.7	0.0	3.7	0.0	0.0
2-YR	2.6	0.7	0.0	3.1	0.0	0.0
5-YR	2.5	0.6	0.0	2.7	0.0	0.0
10-YR	2.4	0.4	0.0	2.6	0.0	0.0
25-YR	2.3	0.3	0.0	1.2	0.0	0.0
50-YR	2.1	0.3	0.0	1.0	0.0	0.0
100-YR	1.8	0.3	0.0	0.9	0.0	0.0
200-YR	1.8	0.2	0.0	0.8	0.0	0.0
500-YR	1.5	0.1	0.0	0.8	0.0	0.0

HURRICANE CREEK

General

C.1.119. Hurricane Creek, a tributary of the Comite River, has a drainage area of 12.0 square miles. The stream originates in the North

Highlands section of Baton Rouge and flows southward to Mohican Street, changing to eastward from there to its confluence with the Comite River at about Mile 6.5 (see Plate C-8). The floodplain is relatively narrow in the highly-developed areas along the stream's headwaters and broadens considerably farther downstream. Its major tributary has a drainage area of 4.4 square miles. It flows generally southeastward, intersecting Hurricane Creek at about Mile 1.0.

C.1.120. In 1959, the State of Louisiana, Department of Public Works improved the lower portion of Hurricane Creek from its mouth to Joor Road. Between 1967 and 1969, the remaining channel of Hurricane Creek from Joor Road to Sycamore Drive was enlarged and the reach from Victoria Drive to Sycamore Drive was concrete lined. Channel improvements were made to Robert Canal from 1973 to 1974. The channel was improved from the mouth to Riffel Avenue in 1973 and was concrete lined from Riffel Avenue to approximately 1200 feet north of Glen Oaks Drive from 1973 to 1974.

Hydraulic Analysis

C.1.121. There are several stream gages on Hurricane Creek and Robert Canal. Their locations and period of records are provided in Table C-1-7.

C.1.122. The January 1979 East Baton Rouge Parish Flood Insurance Study used this gage information and hydraulic characteristics to develop flowlines for the 10-yr, 100-yr, and 500-yr flood events on Hurricane Creek and for the 100-yr and 500-yr flood events on Robert Canal. The study limits of the FIS for Hurricane Creek were from its mouth to the confluence of Hollywood and Wildwood Laterals at Lorraine Street. Robert Canal was studied from its mouth to Robert Canal Tributary #1 just upstream of Glen Oaks Drive. The November 1985 FIS extended the limit of study on Robert Canal to Ford Avenue, an extension of about 0.5 miles. In 1986, new cross-sectional data was taken at all bridges and major tributaries on Hurricane Creek from its mouth to Victoria Drive (the beginning of the concrete channel). Cross-sectional data was also taken on Robert Canal from its mouth to the begining of the concrete channel. A HEC-2 model using the 1986 cross-section data for the earthen channel and the FIS cross-section data for the concrete-lined channels was developed and calibrated to approximate the FIS flowlines. As part of the January 1990 Amite River and Tributaries, Comite River Basin Feasibility Study, flowlines for various flood events were developed for the Comite River. The resulting stage-frequency curves were used to supply the starting water surface elevations for the Hurricane Creek HEC-2 model. The following tables provide the existing conditions stages for the Hurricane Creek watershed resulting from the HEC-2 model.

TABLE C-1-34
HURRICANE CREEK AND TRIBUTARIES
EXISTING CONDITIONS STAGES (FT NGVD)

WITHOUT COMITE RIVER DIVERSION

Hurricane Creek

Event	Mouth	Robert Canal	Joor Road	Victoria Drive	Bird Sta. Lateral
1-YR	38.9	39.3	39.9	41.2	42.5
2-YR	41.7	42.0	42.4	43.5	44.4
5-YR	44.7	45.0	45.2	46.1	47.0
10-YR	47.1	47.3	47.5	48.0	48.8
25-YR	48.9	49.0	49.2	49.5	50.4
50-YR	51.2	51.3	51.4	51.5	51.7
100-YR	52.6	52.6	52.7	52.9	53.0
200-YR	52.9	52.9	53.0	53.2	53.3
500-YR	53.2	53.3	53.3	53.5	53.6

Robert Canal

Event	Mouth	Joor Road	Silver Leaf Ave	Glen Oaks Drive
1-YR	39.3	39.7	46.1	47.2
2-YR	42.0	42.3	46.8	47.9
5-YR	45.0	45.1	48.0	48.9
10-YR	47.3	47.3	49.3	50.0
25-YR	49.0	49.1	50.6	51.2
50-YR	51.3	51.3	52.2	52.6
100-YR	52.6	52.7	53.4	53.8
200-YR	52.9	53.0	53.8	54.3
500-YR	53.3	53.3	54.1	54.8

WITH COMITE RIVER DIVERSION

Hurricane Creek

Event	Mouth	Robert Canal	Joor Road	Victoria Drive	Bird Sta. Lateral
1-YR	36.4	37.1	38.1	40.1	41.9
2-YR	38.7	39.3	40.2	41.9	43.3
5-YR	41.0	41.6	42.3	43.9	45.1
10-YR	43.2	43.7	44.2	45.7	46.9
25-YR	45.3	45.7	46.1	47.1	48.4
50-YR	47.0	47.3	47.6	48.3	49.4
100-YR	48.4	48.6	49.0	49.4	50.7
200-YR	49.5	49.7	50.0	50.4	51.2
500-YR	50.5	50.7	50.9	51.3	51.8

TABLE C-1-34 (Continued)
HURRICANE CREEK AND TRIBUTARIES
EXISTING CONDITIONS STAGES (FT NGVD)

Robert Canal

Event	Mouth	Joor Road	Silver Leaf Ave	Glen Oaks Drive
1-YR	37.1	37.8	46.1	47.2
2-YR	39.3	39.9	46.8	47.9
5-YR	41.6	42.0	47.5	48.7
10-YR	43.7	44.0	48.3	49.4
25-YR	45.7	45.9	49.3	50.2
50-YR	47.3	47.4	50.1	51.0
100-YR	48.6	48.7	51.0	51.8
200-YR	49.7	49.8	51.8	52.5
500-YR	50.7	50.7	52.6	53.3

C.1.123. The following table provides the discharges used for the existing conditions modelling. The development of these discharges is discussed in the Hydrologic Modeling Section.

TABLE C-1-35
HURRICANE CREEK AND TRIBUTARIES
EXISTING CONDITIONS DISCHARGES (CFS)

Hurricane Creek

Event	Mouth	Robert Canal	Victoria Drive	Airline Highway	Bird Sta. Lateral
1-YR	2,020	1,320	1,210	875	540
2-YR	2,480	1,620	1,470	1,070	650
5-YR	3,080	1,990	1,810	1,320	780
10-YR	3,610	2,340	2,120	1,560	920
25-YR	4,260	2,730	2,490	1,830	1,100
50-YR	4,710	2,970	2,710	2,000	1,200
100-YR	5,410	3,420	3,080	2,280	1,350
200-YR	6,060	3,810	3,420	2,520	1,480
500-YR	6,850	4,310	3,820	2,820	1,640

Robert Canal

Event	Mouth	Riffel Avenue	Silver Leaf Ave.	Glen Oaks Drive
1-YR	770	770	475	250
2-YR	940	940	580	305
5-YR	1,180	1,150	705	365
10-YR	1,380	1,340	825	425
25-YR	1,630	1,560	965	485
50-YR	1,790	1,700	1,050	525
100-YR	2,050	1,940	1,190	595
200-YR	2,290	2,150	1,310	660
500-YR	2,570	2,410	1,470	740

Alternatives - Channel Improvements

C.1.124. The channel improvements done on Hurricane Creek and Robert Canal since 1959 were very extensive. The analysis of this study indicated that the previous channel enlargement and concrete-lining have virtually eliminated flooding problems due to headwater sources. The flowlines along Hurricane Creek and Robert Canal are relatively flat, indicating that the remaining flooding problems stem from backwater from the Comite River. As a result, further channel improvement on Hurricane Creek and Robert Canal would not produce significant stage lowerings. No channel improvement alternatives were developed for this watershed. Profile plots of the 10-yr and 100-yr existing flowlines are provided on Plates C-42 and C-43. Stage-frequency curves for several locations in the watershed for existing conditions are provided on Plates C-85 to C-88. Overflow maps showing the 10-yr event are provided on plates in Appendix F.

BLACKWATER BAYOU

General

C.1.125. Blackwater Bayou, with a drainage area of about 15.0 square miles, is a tributary of the Comite River. The headwaters begin near Deerford, Louisiana and flows southward to its confluence with the Comite River at about Mile 9. It has two unnamed tributaries that will herein be referred to as Tributary #1 and Tributary #2. The watershed is located east of the Baton Rouge city limits and is not in a heavily urbanized area (see Plate C-7).

Hydraulic Analysis

C.1.126. There are two U.S.G.S. stream gages on Blackwater Bayou. There are no gages on either of the tributaries. The gage locations and period of records are provided in Table C-1-7.

C.1.127. The January 1979 East Baton Rouge Parish Flood Insurance Study used this gage information and hydraulic characteristics of the streams in the community to provide estimates of the elevations of floods of the 10-yr, 100-yr, and 500-yr events. The limits of the study were from its mouth to Blackwater Road. The FIS states that flooding upstream of Blackwater Road is controlled by the Comite River and that Comite River backwater effects extend upstream of the mouth 0.8 miles. Upstream of the backwater effects of the Comite River, interbasin flow from the Comite River to Blackwater Bayou occurs for flood events on the Comite River in excess of the 25-yr event.

C.1.128. A HEC-2 model of Blackwater Bayou was developed using the cross-sectional data below Blackwater Road from the 1979 FIS. In July

1987, additional cross-sectional data was taken at all bridges and tributaries from upstream of Blackwater Road to Greenwell Springs Road. These cross-sections were added to the model. As part of the January 1990 Amite River and Tributaries, Comite River Basin Feasibility Report, flowlines were developed for the Comite River for various flood events. The resulting stage-frequency curves were used to provide the starting water surface elevations for the Blackwater Bayou HEC-2 model.

C.1.129. The November 1985 FIS expanded the Balckwater Bayou study to include Tributary #1 and Tributary #2. Starting water surface elevations for Tributary #1 were taken from the flowlines developed on Blackwater Bayou below Blackwater Road. For Tributary #2, starting water surface elevations were determined using the slope/area method. However, for this study, starting water surface elevations for Tributary #2 were obtained from the expanded HEC-2 model. The limits of the study for Tributaries #1 and #2 were from the mouth to McCullough Road and from the mouth to 6500 feet upstream of Blackwater Road, respectively. The following tables provide the existing conditions stages for the Blackwater Bayou watershed resulting from the HEC-2 model.

TABLE C-1-36
BLACKWATER BAYOU
EXISTING CONDITIONS STAGES (FT NGVD)

WITHOUT COMITE RIVER DIVERSION

Blackwater Bayou

Event	Mouth	Hooper Road	Crumholt Road	Carey Road	Blackwater Road	Old Settlement
1-YR	42.6	51.6	60.2	64.9	76.0	77.6
2-YR	45.9	52.7	61.4	65.2	76.3	78.1
5-YR	49.2	53.9	61.9	65.6	76.6	78.3
10-YR	51.6	55.5	62.4	66.1	76.7	78.6
25-YR	53.5	56.9	62.9	66.7	76.9	78.8
50-YR	55.5	60.4	65.4	68.5	77.2	79.0
100-YR	56.5	61.8	66.6	69.4	77.4	79.1
200-YR	57.0	62.6	67.2	69.8	77.6	79.3
500-YR	57.5	63.3	67.8	70.2	77.8	79.5

WITH COMITE RIVER DIVERSION

Blackwater Bayou

Event	Mouth	Hooper Road	Crumholt Road	Carey Road	Blackwater Road	Old Settlement
1-YR	40.2	51.6	60.2	64.9	76.0	77.6
2-YR	42.1	52.7	61.4	65.2	76.3	78.1
5-YR	44.6	53.7	61.9	65.6	76.6	78.3
10-YR	46.6	54.6	62.4	66.1	76.7	78.6
25-YR	48.6	56.1	62.9	66.7	76.9	78.8
50-YR	50.3	59.7	65.4	68.5	77.2	79.0
100-YR	52.0	61.2	66.6	69.4	77.4	79.1
200-YR	53.1	61.9	67.2	69.8	77.6	79.3
500-YR	54.2	62.6	67.8	70.2	77.8	79.5

TABLE C-1-36 (Continued)
BLACKWATER BAYOU
EXISTING CONDITIONS STAGES (FT NGVD)

WITH AND WITHOUT COMITE RIVER DIVERSION

Tributaries #1 and #2

	Tributary #1			Tributary #2		
Event	Mouth	Gurney Road	Core Lane	Mouth	LA Hwy 410	Private Road
1-YR	57.1	64.4	68.4	66.2	71.8	75.5
2-YR	58.1	64.7	69.1	66.6	72.1	75.6
5-YR	59.1	65.0	70.0	67.0	72.3	75.7
10-YR	60.0	65.2	70.6	67.3	72.5	75.8
25-YR	60.8	65.5	71.0	67.6	72.7	75.9
50-YR	64.4	65.8	71.3	70.0	72.9	76.0
100-YR	65.8	66.0	71.4	71.0	73.1	76.1
200-YR	66.4	66.5	71.5	71.3	73.2	76.2
500-YR	67.0	67.1	71.6	71.8	73.3	76.3

C.1.130. The development of the discharges used in the HEC-2 model for Blackwater Bayou below Blackwater Road and for Tributaries #1 and #2 is discussed in the Hydrologic Modelling Section. Discharges for Blackwater Bayou above Blackwater Road were proportioned based on drainage area. The following table provides the existing conditions discharges used in the HEC-2 model for this watershed.

TABLE C-1-37
BLACKWATER BAYOU
EXISTING CONDITIONS DISCHARGES (CFS)

Blackwater Bayou

Event	Mouth	Trib #1	Trib #2	McCullough Road	Old Settlement
1-YR	2,850	2,000	1,500	1,200	600
2-YR	3,550	2,500	1,900	1,550	775
5-YR	4,360	3,050	2,350	1,900	950
10-YR	5,180	3,620	2,750	2,250	1,125
25-YR	6,110	4,270	3,250	2,650	1,325
50-YR	14,020	11,910	3,750	3,100	1,550
100-YR	18,875	16,500	4,200	3,400	1,700
200-YR	21,200	18,500	4,900	4,000	2,000
500-YR	24,300	20,900	6,000	4,900	2,450

Tributaries #1 and #2

	Tributary #1			Tributary #2		
Event	Mouth	Gurney Road	Trib.	Mouth	LA Hwy 410	Private Road
1-YR	1,450	870	630	610	440	290
2-YR	1,800	1,070	770	740	540	350
5-YR	2,190	1,300	940	880	640	430
10-YR	2,470	1,470	1,050	990	720	480
25-YR	2,940	1,760	1,240	1,170	850	560
50-YR	3,340	1,970	1,410	1,330	950	625
100-YR	3,720	2,190	1,560	1,470	1,050	685
200-YR	3,900	2,350	1,670	1,550	1,130	740
500-YR	4,470	2,620	1,860	1,750	1,250	810

ALTERNATIVES

Channel Improvement

C.1.131. For Blackwater Bayou, the soil erodability problems mentioned previously exist in this watershed (see F&M Br report). Earthen channel improvements will aggravate the channel bank stability and result in accelerated bank erosion and failures, thereby requiring some bank protection (geo-frabic and/or riprap). These improvements were analyzed and the cost of maintenance and additional real estate were included since residential development has not encroached on the existing banks as heavily as some other channels. As discussed earlier, inter-basin flow from the Comite River occurs for floods in excess of the 25-yr event. Therefore, channel improvements for Blackwater Bayou for larger flood events would be either ineffective or cost-prohibitive and the study was limited to investigating 10-yr and 25-yr channel designs. The channel designs provide channel enlargement along most of the stream as well as increasing the available flow area under some bridges. The bridge improvements were necessary to increase flow area and reduce head losses. No improvements were analyzed for Tributary #2. That stream does not meet the criteria for Federal participation under flood control authorities (i.e., 10-year frequency discharge is not greater than 800 cfs). The following table summarizes the channel improvements investigated.

TABLE C-1-38
BLACKWATER BAYOU
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
Plan BW-P1 -- 10-yr Earthen Channel Design - Blackwater Bayou Only		
Blackwater Bayou	Mouth to Hooper Rd	No Work
	Hooper Rd to Old Settlement Rd	35' BW: 1V on 3.5 H SS
	Blackwater Rd Bridge	Lengthen Br 50 feet
	Crumholt Rd old bridge	Remove abandoned Bridge
	Crumholt Rd Bridge	Lengthen Br 112 feet
	Carey Rd Bridge	Lengthen Br 50 feet
	Dyer Road Bridge	Lengthen Br 35 feet
	Blackwater Road Br	Lengthen Br 45 feet
	McCullough Rd Bridge	Lengthen Br 35 feet
	Old Settlement Rd to Greenwell Springs Rd	15' BW: 1V on 3.5H SS
	Greenwell Springs Rd	Clean Existing Culvert
Tributary # 1		No Work
Tributary # 2		No Work

TABLE C-1-38 (Continued)
BLACKWATER BAYOU
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
Plan BW-P2 -- 10-yr Earthen Channel Design - Blackwater Bayou & Trib #1		
Blackwater Bayou	Mouth to Hooper Rd	No Work
	Hooper Rd to Old Settlement Rd	35' BW: 1V on 3.5 H SS
	Blackwater Rd Bridge	Lengthen Br 50 feet
	Crumholt Rd old bridge	Remove abandoned Bridge
	Crumholt Rd Bridge	Lengthen Br 112 feet
	Carey Rd Bridge	Lengthen Br 50 feet
	Dyer Road Bridge	Lengthen Br 35 feet
	Blackwater Road Br	Lengthen Br 45 feet
	McCullough Rd Bridge	Lengthen Br 35 feet
	Old Settlement Rd to Greenwell Springs Rd	15' BW: 1V on 3.5H SS
	Greenwell Springs Rd	Clean Existing Culvert
Tributary # 1	Mouth to McCullough Rd	5' BW: 1V on 3.5H SS
	Core Lane Bridge	Lengthen Br 16 feet
Tributary # 2		No work
Plan BW-P3 -- 25-yr Earthen Channel Design - Blackwater Bayou Only		
Blackwater Bayou	Mouth to Hooper Rd	70' BW: 1V on 3.5H SS
	Hooper Rd to Dyer Rd	50' BW: 1V on 3.5H SS
	Blackwater Rd Bridge	Lengthen Br 65 feet
	Crumholt Rd old bridge	Remove abandoned Bridge
	Crumholt Rd Bridge	Lengthen Br 127 feet
	Carey Rd Bridge	Lengthen Br 65 feet
	Dyer Road Bridge	Lengthen Br 35 feet
	Dyer Rd to Old Settlement Rd	35' BW: 1V on 3.5H SS
	Blackwater Road Br	Lengthen Br 45 feet
	McCullough Rd Bridge	Lengthen Br 35 feet
	Old Settlement Rd to Greenwell Springs Rd	15' BW: 1V on 3.5H SS
	Greenwell Springs Rd	Clean Existing Culvert
Tributary # 1		No Work
Tributary # 2		No Work

TABLE C-1-38 (Continued)
BLACKWATER BAYOU
CHANNEL IMPROVEMENT ALTERNATIVES

Stream	Reach	Type of Improvement
Plan BW-P4 -- 25-yr Earthen Channel Design - Blackwater Bayou & Trib #1		
Blackwater Bayou	Mouth to Hooper Rd	70' BW: 1V on 3.5H SS
	Hooper Rd to Dyer Rd	50' BW: 1V on 3.5H SS
	Blackwater Rd Bridge	Lengthen Br 65 feet
	Crumholt Rd old bridge	Remove abandoned Bridge
	Crumholt Rd Bridge	Lengthen Br 127 feet
	Carey Rd Bridge	Lengthen Br 65 feet
	Dyer Road Bridge	Lengthen Br 35 feet
	Dyer Rd to Old Settlement Rd	35' BW: 1V on 3.5H SS
	Blackwater Road Br	Lengthen Br 45 feet
	McCullough Rd Bridge	Lengthen Br 35 feet
	Old Settlement Rd to Greenwell Springs Rd	15' BW: 1V on 3.5H SS
	Greenwell Springs Rd	Clean Existing Culvert
Tributary # 1	Mouth to McCullough Rd	5' BW: 1V on 3.5H SS
	Core Lane Bridge	Lengthen Br 16 feet
Tributary # 2		No work

C.1.132. In addition, concrete-lining of the 10-year earthen channel design and the 25-yr earthen channel design was investigated (with reduced channel excavation and reduced bridge enlargements). This was modelled in the HEC-2 runs by changing the channel Manning's 'n' values to that of concrete. The concrete-lining begins at Hooper Road and extends upstream the entire length of Blackwater Bayou and Tributary #1. Again, due to the inter-basin flow from the Comite River, the highest level of protection investigated was the 25-yr flood event.

Tentatively Selected Plan - Blackwater Bayou

C.1.133. The tentatively selected plan (TSP) for the Blackwater Bayou watershed is the 10-yr earthen channel design (Plan BW-P2). Plate C-7, which is a map of Blackwater Bayou and its tributaries, shows the proposed channel improvements of the recommended plan. Plates C-44 to C-49 show the extent of the channel improvement along with the existing condition and with project flowlines for the 10-yr and 100-yr events. Stage-frequency curves for several locations in the watershed for existing and with-project conditions are provided as Plates C-89 to C-93. Overflow maps for the Blackwater Bayou watershed denoting the existing conditions and with project conditions 10-yr floodplains are provided on plates in Appendix F. The following table shows the stage reductions at key points along Blackwater Bayou and its tributaries.

TABLE C-1-39
BLACKWATER BAYOU
10-YR CHANNEL IMPROVEMENT
PROJECT STAGE REDUCTIONS (FT)

WITHOUT COMITE RIVER DIVERSION

Blackwater Bayou

Event	Hooper Road	Crumholt Road	Carey Road	Blackwater Road	Old Settlement
1-YR	2.3	3.3	4.8	2.9	2.3
2-YR	2.2	3.6	4.1	2.3	2.0
5-YR	1.9	3.1	3.5	1.9	1.6
10-YR	1.9	2.9	3.3	1.4	1.4
25-YR	1.0	2.5	3.2	1.1	0.6
50-YR	1.0	1.3	1.2	1.1	0.3
100-YR	0.9	1.2	1.0	1.0	0.3
200-YR	0.9	1.2	1.0	0.9	0.3
500-YR	0.9	1.2	1.0	0.6	0.3

WITH COMITE RIVER DIVERSION

Blackwater Bayou

Event	Hooper Road	Crumholt Road	Carey Road	Blackwater Road	Old Settlement
1-YR	2.3	3.3	4.8	2.9	2.3
2-YR	2.3	3.6	4.1	2.3	2.0
5-YR	2.3	3.2	3.5	1.9	1.6
10-YR	2.2	2.7	3.3	1.4	1.4
25-YR	2.7	2.5	3.2	1.1	0.6
50-YR	1.7	1.2	1.2	1.1	0.3
100-YR	1.5	1.4	1.0	1.0	0.3
200-YR	1.4	1.4	1.0	0.9	0.3
500-YR	1.2	1.3	1.0	0.6	0.3

WITH AND WITHOUT COMITE RIVER DIVERSION

Tributaries #1 and #2

Event	2400 ft U/S Mouth	Tributary #1 Gurney Road	Tributary #1 Core Lane	Tributary #2 Mouth	Tributary #2 LA Hwy 410
1-YR	1.5	2.3	1.2	1.0	0.0
2-YR	1.7	1.9	1.5	0.8	0.0
5-YR	2.0	1.6	2.0	0.6	0.0
10-YR	2.5	1.4	2.2	0.6	0.0
25-YR	2.2	1.2	1.9	0.6	0.0
50-YR	2.0	1.2	1.0	0.6	0.0
100-YR	1.8	1.2	0.6	0.6	0.0
200-YR	1.7	1.2	0.6	0.6	0.0
500-YR	1.5	1.2	0.5	0.5	0.0

URBANIZATION

C.1.134. The study area consists primarily of Baton Rouge and its surrounding suburbs. Although the area is highly urbanized, there is still room for future urbanization. As such, the effects of future urbanization on drainage could be significant. Projections of future urbanization over the proposed project life were obtained from the Louisiana State Planning Office in Baton Rouge, Louisiana. Increases in discharges were determined by methods outlined in "Floods in Louisiana", Third Edition. Stage increases were approximated using existing conditions rating curves located in a headwater flooding reach of the streams. The following table provides the results of the analysis on the effects of future urbanization.

TABLE C-1-40
EFFECTS OF FUTURE URBANIZATION

Stream	Percent Urbanization[1]		Increase in Peak Q (%/cfs)[2]		Increase in Stage (Ft.)[3]	
	1985	2040	10-yr	100-yr	10-yr	100-yr
Jones Creek (Lower)	77	97	8/400	8/600	0.3	0.3
Weiner Creek	90	99	8/100	7/170	0.1	0.2
Lively Bayou	70	94	13/150	12/200	0.2	0.2
Lively B. Trib.	97	98	0	0	0	0
Ward Creek (Lower)	40	100	14/900	13/1370	0.6	0.3
Upper Ward Creek	75	98	16/400	14/550	0.4	0.3
North Br. Ward Cr.	97	100	1.5/50	1/70	0.1	0.1
Dawson Creek (Lower)	72	96	7/200	7/300	0.3	0.3
Upper Dawson Cr.	92	96	2/30	2/40	0.1	0.1
B. Duplantier[4]	82	91	4/50	4/80	0.1	0.1
Bayou Fountain	26	65	61/1300	63/1950	1.1	0.3
Blackwater Bayou[5]	31	40	8/200	7/300	0.3	0
Beaver Bayou	36	50	14/300	13/500	0.2	0.1
Claycut Bayou	52	90	18/400	17/600	0.6	0.5

[1] Percent Urbanization data supplied by the La. State Planning Office, Baton Rouge, La.

[2] Assumed 40 percent of rubanized area to be impervious and 80 percent to be serviced by storm sewers. Increases in discharges determined by methods outlined in "Floods in Louisiana", Third Edition.

[3] Stage increases approximated by existing conditions rating curves located in a headwater flooding reach of the stream.

[4] Bayou Duplantier has a relatively flat flowline for all events and is therefore controlled by stages at its confluence with Dawson Creek.

[5] Interbasin flow from the Comite River occurs for the 25-year and greater events and, therefore, increases in discharge due to urbanization was small compared to the quantity of interbasin flow for these events.

RISK AND UNCERTAINTY ANALYSIS

C.1.135. The majority of existing conditions and alternatives analyses were completed prior to the current guidelines for conducting risk and uncertainty studies. As such, an initial sensitivity analysis was conducted to determine the potential range of effects due to factors such as discharge, channel roughness, cross-sectional area, etc. This was conducted for existing conditions and for the recommended plan conditions. The results indicated that the factors could cause a 0.5-1.0 foot uncertainty in stages. To verify these results, the risk and uncertainty methods were applied to a few stream reaches.

C.1.136 Discharges for this study were obtained from prior Flood Insurance Studies and Flood Plain Information reports produced over the previous 20 years. No discharge gage data was available for the study watersheds. The discharges were developed using empirical or regional based regression equations that typically supply only peak discharge data for certain frequencies. The HEC program Flood Frequency analysis (FFA) was used to analyze the frequency discharges to develop 5% confidence limits. For this analysis, Mean, Standard Deviation, and Skew are estimated using the 10-yr, 50-yr, and 100-yr discharges and assuming an equivalent period of record. The equivalent period of record was selected based on the length of stage data available. Figure C-1 provides the discharge-frequency curve developed for the Jones Creek at Florida Boulevard reach. The confidence bands support the conclusions from the sensitivity analysis. Similar results were obtained for test reaches on the other streams.

C.1.137. Rating curves for the test reaches were developed from the HEC-2 modeling. The curves were developed for existing and with-project conditions. Confidence limits were estimated by varying the channel's Manning's 'n' values and by accounting for surveying and topographic error using the available risk and uncertainty guidelines. Figure C-2 provides the rating curves developed for the Jones Creek at Florida Boulevard reach. When the confidence limit discharges were applied to the rating curve, stage variances were within the 0.5-1.0 foot uncertainty obtained from the sensitivity analysis. Similar results were obtained for the other test reaches.

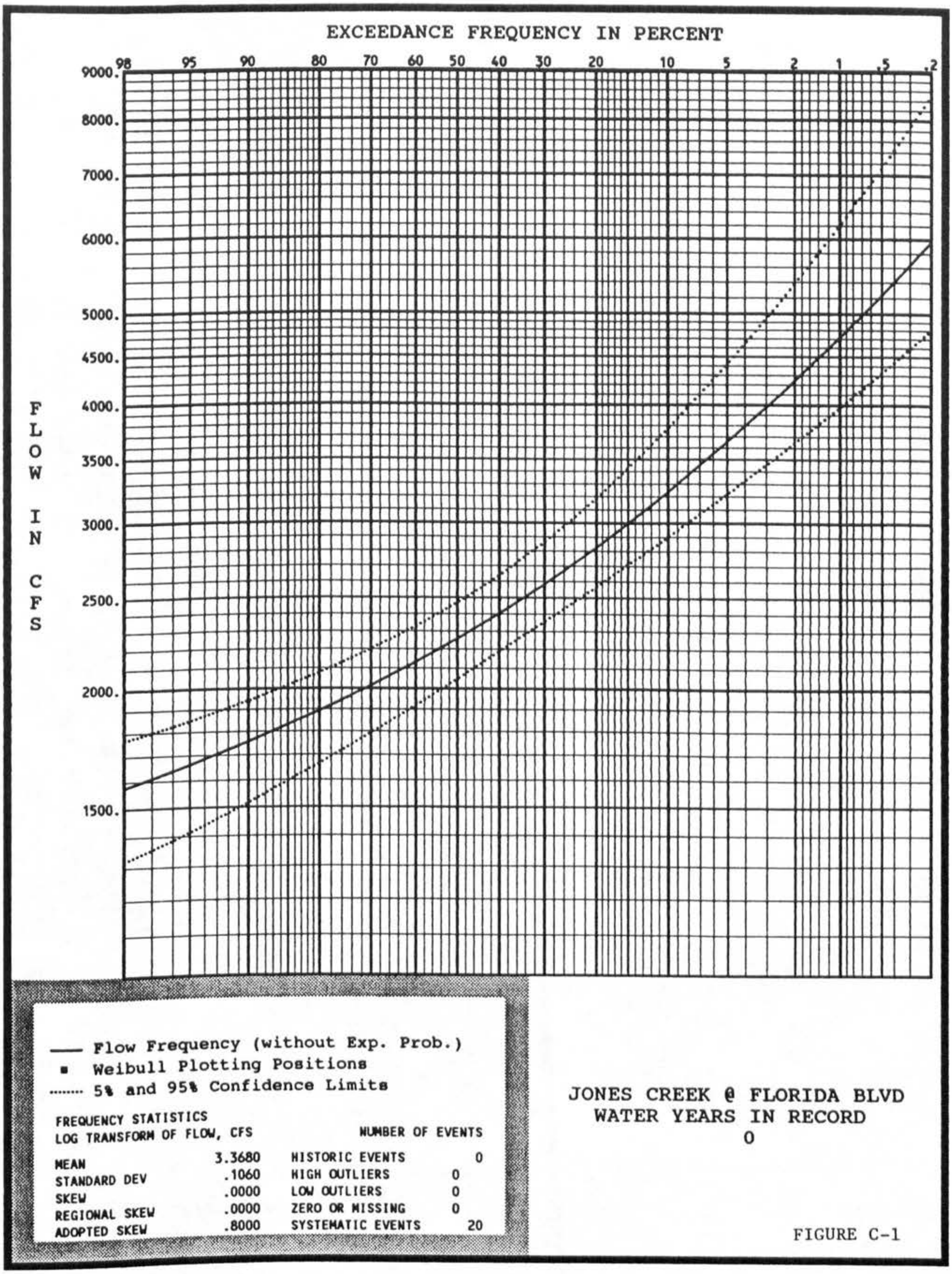
MONITORING PROGRAM

C.1.138. As indicated earlier, the U. S. Geological Survey has an existing stream gaging program for East Baton Rouge Parish consisting primarily of flood peak stage gages with a few continuously recording gages. This existing gaging program will be expanded in order to monitor the proposed improvements. Table C-1-41 describes the additions. The changes will be made to the existing program during the PED phase. This will enable the gathering of a short period of record prior to construction to use in gaging the effectiveness of the project. Eight stations will require relocation after construction is complete.

All gages will be installed and maintained by the U. S. G. S. as part of their existing program in the Amite River Basin.

TABLE C-1-41
GAGING PROGRAM ADDITIONS

SITE	DESCRIPTION
Bayou Fountain Basin	
B. Fountain at Gardere Lane	Stage recorder & peak discharge
Ward Creek Basin	
Ward Ck at Siegen Lane	Add peak discharge & rain gage
Ward Ck at Burden Dr	Stage recorder & peak discharge
Ward Ck at Bluebonnet Rd	Crest-stage gage
N. Br. Ward Ck at Jefferson Hwy	Stage recorder & peak discharge
Dawson Ck at Quail Dr	Crest-stage gage
Dawson Ck at Staring Lane	Crest-stage gage
B. Duplantier at Lee Dr	Add peak discharge
Jones Creek Basin	
Jones Ck at Woodland Ridge Dr	Stage recorder & peak discharge
Jones Ck at Woodlake Dr	Flood profile gage
Jones Ck at Goodwood Blvd	Stage recorder, peak discharge, rain gage
Weiner Ck at Sherwood Forest Blvd	Crest-stage gage
Lively B. at Old Hammond Hwy	Stage recorder & peak discharge
Beaver Bayou Basin	
Beaver B. at Hooper Road	Add peak discharge to existing gage
Beaver B. at Wax Road	Stage recorder & continuous discharge above base
Beaver B. at Frenchtown Rd	Stage recorder
Blackwater Bayou Basin	
Blackwater B. at Hooper Rd	Stage recorder, continuous discharge above base, & rain gage
Blackwater B. at Dryer Rd	Add crest-stage gage



EXCEEDANCE FREQUENCY IN PERCENT
98 95 90 80 70 60 50 40 30 20 10 5 2 1 .5 .2
9000. 8000. 7000. 6000. 5000. 4500. 4000. 3500. 3000. 2500. 2000. 1500.
FLOW IN CFS
Flow Frequency (without Exp. Prob.)
Weibull Plotting Positions
5% and 95% Confidence Limits
FREQUENCY STATISTICS
LOG TRANSFORM OF FLOW, CFS
NUMBER OF EVENTS
MEAN 3.3680
STANDARD DEV .1060
SKEW .0000
REGIONAL SKEW .0000
ADOPTED SKEW .8000
HISTORIC EVENTS 0
HIGH OUTLIERS 0
LOW OUTLIERS 0
ZERO OR MISSING 0
SYSTEMATIC EVENTS 20
JONES CREEK @ FLORIDA BLVD
WATER YEARS IN RECORD
0

FIGURE C-1

JONES CREEK @ FLORIDA BLVD (HWY 190)
STAGE VS DISCHARGE UNCERTAINTY

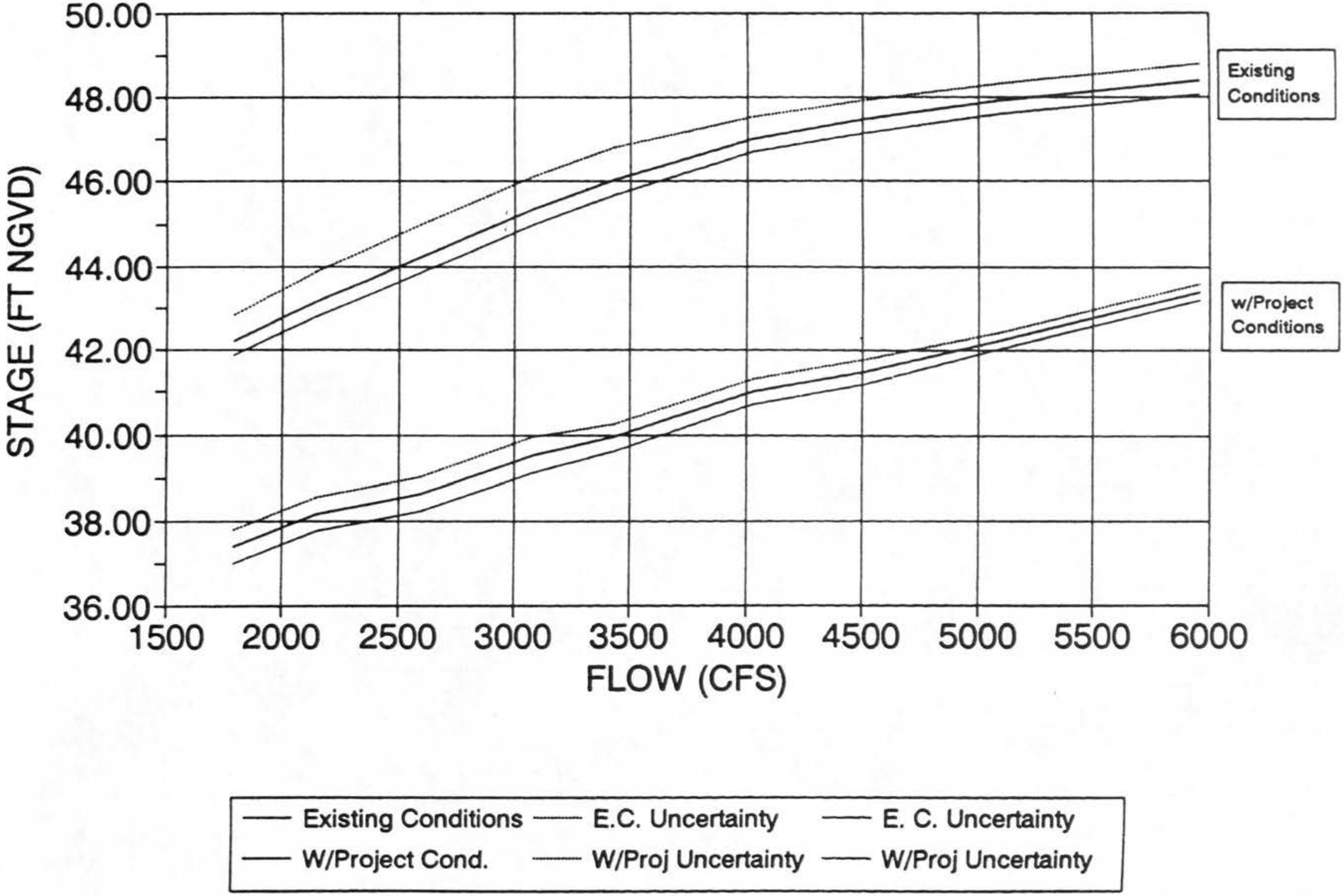


FIGURE C-2

SECTION 2 - SEDIMENTATION

GENERAL

C.2.1. The last major investigation of sedimentation performed in the study area was for the Lower Mississippi Region Comprehensive Study (LMRCS). This study, released in 1974, describes the surface geology and sediment yield of the Amite River Basin. The surface geology is comprised of two primary soil groups: Southern Mississippi Valley Silty Uplands and Southern Mississippi Valley Alluvium (delta). A rough division between these two soil groups falls across the middle of the study area, just to the south of the Comite River and running from east to west. The LMRCS describes the majority of the sediment yield as being derived from the silty upland soils. The overall sediment yield for the Comite Basin is estimated from the report as 750 tons per square mile per year. Stream bank erosion is also a major sediment source. The rate of bank erosion in the Comite River Basin is estimated from the report as 1535 tons per mile per year.

DATA COLLECTION

C.2.2. Several field trips were taken to observe the stream beds in the study area. Fifteen bed sediment samples were also collected at various locations from streams in the area. The majority of these samples were taken at bridge or street crossings and were taken directly from the channel thalweg. The sample locations and grain size data are shown below.

Sample	D_{35}	D_{50}	D_{85}	Location
1	.010	.0190	.035	Bayou Fountain nr Highland Ct
2	.007	.170	.030	Bayou Duplanier at Bluebonnet
3	.230	.300	.400	Ward Creek at Bluebonnet
4	.0095	.0190	.025	Weiner Creek at Sherwood Blvd
5	.005	.0130	.021	Jones Creek at Ridge Blvd
6	.400	.480	.580	N Br/Ward Cr @ Old Hammond Hy
7	.018	.027	.041	Jones Creek Trib @ Gerald Dr
8	.300	.360	.410	Blackwater Bayou @ Hooper Rd
9	.360	.390	.430	Blackwater Bayou @ Carey Rd
10	.350	.380	.400	Blackwater Trib @ Gurney Rd
11	.195	.210	.250	Beaver Bayou Tr#2 @ Devall Rd
12	.300	.340	.380	Beaver Bayou Tr#1 @ Hooper Rd
13	.430	.430	.430	Beaver Bayou at Greenwell Spr
14	.310	.400	.460	Lively Bayou at Flannery Road
15	.340	.400	.440	Ward Creek at Bluebonnet

C.2.3. The analyzed bed samples are for the most part in agreement with the visual field observations; and, the two confirm the variation of soils presented in the LMRCS.

EXISTING CONDITIONS

C.2.4. The streams north of the Comite River, Beaver Bayou and Blackwater Bayou, have coarse beds consisting primarily of sand with some interspersed gravel. The drainage areas are typified by an erodable layer of sand and loess type soils above a stiff Pliestocene clay layer. The streams display a high degree of instability, with relatively steep slopes and coarse, mobile beds. The banks are actively eroding, with numerous occurrences of bank caving and local scour. The drainage basins are rural and primarily wooded, with some pasture land. In general, the rates of sediment yield and bank erosion from the LMRCS may be applied to these two streams. If no action is taken, bank caving will continue and channel migration will occur.

C.2.5. In the southern portion of the study area, the remaining streams studied are all bedded in a stiff clay material. This clay layer continues to a height of one to three feet above the bed. This clay layer is overburdened with highly erodible silty loess soil to a thickness of eight to sixteen feet. These channels are well vegetated with meandering low flow channels within the banks. The nature of the drainage basins for these streams is urban and suburban, with privately maintained residential and paved commercial property. There is a transition to some undeveloped wooded land in the lower reaches of these streams; however, these are primarily backwater areas. Sediment yield data are not available, and yield projections taken from the LMRCS are not applicable to these streams because the sediment comes from the highly erodible loess soils on the banks. If no action is taken, channel conditions are expected to remain the same.

WITH PROJECT CONDITIONS

C.2.6. Any form of channel improvement constitutes a change in channel regime. The channel will undergo some adjustment to the changed hydraulic conditions for a period of time after completion of the project. The time required for the channel to stabilize is dependent on the degree of stability of the original channel, extent of channel improvement, type of soil in channel bed, and intensity, duration, and frequency of channel forming discharges.

C.2.7. A discussion of the characteristics of stable streams for a range of geometric and physical parameters is presented in a report prepared by Northwest Hydraulic Consultants for the Waterways Experiment Station in 1982. This report is entitled "Hydraulic Design of Stable Flood Control Channels, A Selective Overview of State of the Art." The criteria for stable streams bedded in sand from this report were compared with parameters of the improved channels to determine adjustments that will take place. Some averaged values of the parameters, taken from the HEC-2 computations for project conditions, are shown below.

	Slope ft/ft	Velocity ft/sec	Depth ft	Top Width ft	Discharge cu ft/sec
Beaver Bayou	.00090	5.56	10.75	484	3275
Blackwater Bayou	.00114	4.40	10.00	697	3010

C.2.8. The comparison indicates that the existing slope, that will be unchanged, and the resultant velocities exceed those prescribed for channel stability. Also, the velocities exceed those recommended in EM 1110-2-1601, "Hydraulic Design of Flood Control Channels" for the given bed material. The depths in the improved channels are consistently greater than that permissible for stability; and, in approximately half of the cross-sections the channel width is excessive. It is anticipated that the improved channels will accrete and, in some locations, widen as they adjust.

C.2.9. Estimates of deposition were made for both Beaver and Blackwater Bayous and their tributaries over the entire improved reach of each stream. These estimates were made by comparing each design cross-section with the theoretical stable section indicated in the Northwest Hydraulic Consultants report. The deposition resulting from insufficient transport capacity at the 10 year discharge was accumulated over the stream length. It was assumed that, with a normal distribution of hydrographs, the amount of deposition over ten years would be equal to the volume of excess channel. Thus, in ten years, Beaver Bayou is expected to retain 110,000 cubic yards of sediment, with an additional 10,000 and 30,000 cubic yards accumulating in its two tributaries. For the same period, 120,000 cubic yards of deposition is anticipated in Blackwater Bayou, with another 25,000 cubic yards deposited in its tributary stream. If maintenance dredging is done, it is expected that the channels will re-accrete at a similar rate.

C.2.10. A similar analysis was used on the other streams with project features. The Northwest Hydraulic Consultants Report provides a chart of mean velocity versus allowable shear stress for channels bedded in cohesive or semi-cohesive materials. ASCE Manual 52, "Sedimentation Engineering," contains a table of observed minimum and maximum critical shear stress for materials of varying grain size.

The average velocity and slope of the sampled streams are shown below.

	Velocity ft/sec	Slope ft/ft
Jones Creek	3.4	.00092
Jones Creek Trib.	2.3	.00234
Lively Bayou	3.3	.00106
Lively Bayou Trib.	3.9	.00163
Weiner Creek	4.1	.00209
Ward Creek	4.0	.00115
North Branch	5.5	.00153
Dawson Creek	2.3	.00116

C.2.12. Although channel slopes are steep, the resulting velocities are not excessive for this type of bed material. Sediment transport calculations made for these streams indicate a stable bed; however, loess soil from the banks, in excess of stream transport capacity, will be a continuing problem. Frequent removal will be required.

SECTION 3 - WATER QUALITY

WATER QUALITY STANDARDS AND CRITERIA

C.3.1. Both the Louisiana Department of Environmental Quality (LDEQ) and the US Environmental Protection Agency (EPA) have established ambient water quality criteria applicable to surface waters in the State of Louisiana. These criteria are discussed in the following paragraphs.

Applicable Louisiana State Standards

C.3.2. The LDEQ has established general written water quality criteria which are applicable to all waters of the State of Louisiana. The general written standards relate to the condition of the water as affected by waste discharges or human activity as opposed to purely natural phenomena, and are as follows. The criteria were last revised in 1984.

General water quality standards

C.3.3. Aesthetics. The waters of the state shall be maintained in an aesthetically attractive condition and shall meet the generally accepted aesthetic qualifications.

All waters shall be free from such concentrations of substances attributable to wastewater or other discharges sufficient to:

1. settle to form objectionable deposits;
2. float as debris, scum, oil, or other matter to form nuisances;
3. result in objectionable color, odor, taste, or turbidity;
4. injure, be toxic or produce demonstrated adverse physiological response in humans, animals, fish, shellfish, wildlife, or plants; or
5. produce undesirable or nuisance aquatic life.

C.3.4. Color. Water color shall not be increased to the extent that it will interfere with present usage and projected future use of the streams and water bodies.

1. Waters shall be free from significant increases over natural background color levels;

2. The source of public water supply should not exceed 75 color units on the platinum-cobalt scale; and

3. No increases in true or apparent color shall reduce the level of light penetration below that required by desirable indigenous species of aquatic life.

C.3.5. Floating, suspended, and settleable solids. There shall be no substances present in concentrations sufficient to produce distinctly visible turbidity, solids or scum, nor shall there be any formation of slimes, bottom deposits or sludge banks attributable to waste discharges from municipal, industrial, or other sources including agricultural practices, mining, dredging and the exploration for and production of oil and natural gas. Certain short-term activities, such as maintenance dredging of navigable waterways may be exempted by the Administrative Authority.

C.3.6. Taste and odor. Taste and odor producing substances shall be limited to concentrations in the waters of the state that will not interfere with the production of potable water by conventional water treatment methods, or impart unpalatable flavor to food fish, including shellfish, or result in offensive odors arising from the waters, or otherwise interfere with the designated use of the waters.

C.3.7. Toxic substances. Toxic substances shall not be present in quantities that alone or in combination will be toxic to animal or plant life. Concentrations of persistent toxic substances for which the LDEQ has no numerical criteria shall not exceed the 96-hour $LC_{50}/100$ (one one-hundreth of the 96-hour LC_{50}), where LC_{50} is the concentration of the test material which is lethal to fifty percent of the exposed aquatic organisms. Concentrations of non-persistent, biodegradable toxic substances for which the LDEQ has no numerical criteria shall not exceed the 96-hour $LC_{50}/10$ (one-tenth of the 96-hour LC_{50}). Bioassay techniques will be used in evaluating toxicity utilizing methods and species of test organisms suitable to the purpose at hand. In cases where the stream is used as a public water supply, the level of toxic substances shall not exceed the levels established by the United States Public Health Service drinking water standards latest edition.

C.3.8. Oil and grease. There shall be no free or floating oil or grease present in sufficient quantities to interfere with the designated uses, nor shall emulsified oils be present in sufficient quantities to interfere with the designated uses.

C.3.9. Foaming or frothing materials. None of a persistent nature.

C.3.10. Nutrients. The naturally occurring nitrogen-phosphorous ratio

shall be maintained. On completion of detailed studies on the naturally occurring levels of the various macro and micro nutrients, the state will establish numerical limits on nutrients where possible.

C.3.11. Turbidity. There shall be no substantial increase in turbidity from ambient conditions due to waste discharges. Certain short-term activities, such as maintenance dredging of navigable waterways may be exempt by the Administrative Authority.

C.3.12. Other materials. Limits on other substances not specified in these revised water quality standards shall be in accordance with recommendations set by the LDEQ and/or the Louisiana Department of Health and Human Resources Administration for municipal raw water sources.

Numerical water quality standards

C.3.13. Additionally, LDEQ has established numerical criteria which apply to specific surface waters of Louisiana identified in published tables, as well as their tributaries, distributaries and ancillary streams, and water bodies. The numerical criteria apply specifically with respect to substances or conditions attributed to waste discharges or activities of man as opposed to purely natural phenomena. A list of surface waters in the study area for which numerical criteria are included in the published tables is shown in Table 1. Table 1 also includes designated use categories for the surface waters listed. Designated water uses for each stream are represented as follows:

A = Primary Contact Recreation
B = Secondary Contact Recreation
C = Propagation of Fish and Wildlife
D = Public Water Supply
E = Shellfish Propagation
F = Agriculture
G = Outstanding Natural Resource Waters

C.3.14. The following is a description of the numerical water quality criteria presented in Table 1.

C.3.15. pH. The pH represents minimum and maximum conditions throughout the segment with reasonable gradients applying toward segment boundaries.

C.3.16. In all cases, the pH shall fall within the range of 6.0 to 9.0 standard units (su) unless otherwise specified in the tables. No discharge of wastes shall cause the pH of the water body to vary by more than one pH unit within the specified pH range for that segment where the discharge occurs.

C.3.17. Chlorides, sulfates, and dissolved solids. Values for these parameters apply to the approximate midpoint of the stream segment with reasonable gradients applying toward segment boundaries. Values listed in the standards, in general, represent the arithmetic mean of existing data plus one standard deviation.

C.3.18. Dissolved oxygen. The following dissolved oxygen (DO) values represent minimum values for the type of water specified. These values shall apply at all times except in naturally dystrophic waters or where natural conditions cause the DO to be depressed. For short periods of time, diurnal variations below the standard specified might occur. However, no waste discharge or activity of man shall lower the DO concentration to the point where the diurnal variation falls below the specified minimum.

1. Freshwater. For a diversified population of warmwater biota including sport fish, the daily DO concentration shall be at/or above 5 mg/L assuming normal seasonal and daily variations are above this concentration. However, they might range between 5 and 4 mg/L for short nocturnal periods, not to exceed 8 hours, provided the water quality is favorable in all other respects.

2. Estuarine water. DO concentrations in estuaries and tidal tributaries shall not be less than 4 mg/L at any time or place except in naturally dystrophic waters, or where natural conditions cause DO to be depressed.

3. Coastal water. DO concentration in surface coastal waters shall not be less than 5 mg/L except when the upwellings and other natural phenomena might cause this value to be depressed.

C.3.19. Temperature. The temperature standards enumerated in Table 1, in most cases, represent maximum values obtained from existing data. However, in a few cases, a limited number of unusually high temperatures in the range of 35 degrees to 36 degrees have been deleted as it is felt that these values were recorded during conditions of unseasonably high air temperatures and/or unusually low flows or water levels, and, therefore, do not represent normal maximum temperatures.

C.3.20. In order to protect a diversified warm water biota including game fish, the following temperature criteria shall apply (except when natural conditions cause the temperature to be raised above these limits).

C.3.21. The standard shall consist of two parts, a temperature differential and a maximum temperature. The temperature differential represents the maximum permissible rise above ambient conditions. There shall be no addition of artificial heat once the ambient temperature reaches the maximum temperature specified in the standards.

1. Freshwater (Temperature Differential).

a. Maximum of 5°F [2.8° Centigrade (C)] rise above ambient for streams and rivers.

b. Maximum of 3°F (1.7°C) rise above ambient for lakes and reservoirs.

2. Freshwater (Maximum Temperature). Ninety degrees °F (32.2°C) except where otherwise listed in Table 1 or due to natural conditions such as unusually hot and/or dry weather.

3. Estuarine and Coastal (Temperature Differential).

a. Maximum of 4°F (2.2°C) rise above ambient during the period October through May.

b. Maximum 1.5°F (0.83°C) during the period June through September.

4. Estuarine and Coastal (Maximum Temperature). Ninety-five degrees °F (35°C) except when natural conditions elevate temperature above this level.

These temperature criteria shall not apply to privately-owned reservoirs, or reservoirs constructed solely for industrial cooling purposes.

C.3.22. Bacterial standards. The bacterial standard applicable to a particular stream segment depends upon the use classification of that individual stream segment. Limitations are placed on either fecal coliform content, most probable number (MPN) total coliform content, or a combination of both in order to achieve the stream sanitary quality required for the most restrictive stream water usage.

C.3.23. Table 1, which contains applicable criteria for each water body, designates one of the following four standards as applicable according to present and anticipated usage of the waters.

Standard #1. PRIMARY CONTACT RECREATION - Based on a minimum of not less than five samples taken over not more than a 30-day period, the fecal coliform content shall not exceed a log mean of 200/100 mL nor shall more than 10 percent of the total samples during any 30-day period exceed 400/100 mL.

Standard #2. SECONDARY CONTACT RECREATION - Based on a minimum of not less than 5 samples taken over not more than a 30-day period, the fecal coliform content shall not exceed a log mean of 1,000/100 mL nor shall more than 10 percent of the total samples during any 30-day period exceed 2,000/100 mL.

Standard #3. PUBLIC WATER SUPPLY - The monthly arithmetic mean of total coliform MPN shall not exceed 10,000/100 mL, nor shall the monthly arithmetic mean of fecal coliforms exceed 2,000/100 mL.

Standard #4. SHELLFISH PROPAGATION - The fecal coliform median MPN shall not exceed 14 fecal coliforms per 100 mL, and not more than 10 percent of the samples shall ordinarily exceed an MPN of 43/100 mL for a 5-tube decimal dilution test in those portions of the area most probably exposed to fecal contamination during the most unfavorable hydrographic and pollution conditions.

TABLE C-3-1

1984 LDEQ NUMERICAL STANDARDS APPLICABLE TO SURFACE WATERS IN THE STUDY AREA

Stream Description	Water Uses A B C D E F G	CL mg/L	SO_4 mg/L	DO mg/L	pH Range su	Bacterial Standard BAC	Temperature ^{O}C	TDS mg/L
Comite River - Mississippi State Line to Amite River (Scenic from LA Hwy. 10 to White Bayou)	X X X X	25	10	5.0	6.0-8.5	1	32	150
Amite River - Mississippi State Line to Lake Maurepas (Scenic from state line to LA Hwy. 37)	X X X X	25	10	5.0	6.0-8.5	1	32	150
Bayou Manchac - Headwaters to Amite River	X X X	25	10	5.0	6.0-8.5	1	32	150

C.3.24. <u>Toxic substances</u>. The LDEQ has also established numerical criteria for several toxic substances that are of particular concern for the State of Louisiana. These substances were selected for human health considerations, taste and odor problems, persistence and bioaccumulative capabilities, and potential negative effects on aquatic biota. Table 2 is a listing of these substances and their criteria.

TABLE C-3-2

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY
1984 WATER QUALITY CRITERIA

(All values in ug/L except where noted)

Parameter	FRESH WATER Chronic (24-Hour Average)	FRESH WATER Acute (Maximum at Any Time)	MARINE WATER Chronic (24-Hour Average)	MARINE WATER Acute (Maximum at Any Time)	PUBLIC WATER SUPPLY (Maximum at Any Time)
Phenols	-	50	-	440	5
2-chlorophenol	-	-	-	-	0.1
3-chlorophenol	-	-	-	-	0.1
4-chlorophenol	-	-	-	-	0.1
2,5-dichlorophenol	-	-	-	-	0.5
2,6-dichlorophenol	-	-	-	-	0.2
3,4-dichlorophenol	-	-	-	-	0.3
2,4-dichlorophenol	-	-	-	-	0.3
2,3-dichlorophenol	-	-	-	-	0.04
DDT	0.001	1.1	0.001	0.13	0.24 ng/L
TDE(DDD)	-	0.6	-	3.6	-
DDE	-	1,050	-	14	-
Endrin	0.0023	0.18	0.0023	0.037	1.0
PCB's	0.014	2.0	0.030	10.0	0.79 ng/L
Toxaphene	0.013	1.6	-	0.070	7.1 ng/L
Dieldrin	0.0019	2.5	0.0019	0.71	0.71 ng/L
Aldrin	-	3.0	-	1.3	0.74 ng/L
Chlordane	0.0043	2.4	0.0040	0.09	4.6 ng/L
2,4-D	-	-	-	-	100
2,4,5-TP (Silvex)	-	-	-	-	10
Benzene	-	-	-	-	6.6
Benzidine	-	-	-	-	1.2 ng/L

EPA Water Quality Criteria

C.3.25. The EPA has established ambient water quality criteria applicable to surface waters in the study area. These criteria are shown in Tables 3 and 4. The numerical criteria listed in Tables 3 and 4 have been developed for various physical parameters, nutrients, metals, PCB's, and organic pesticides for uses of freshwater aquatic life and public water supply, respectively.

TABLE C-3-3
1986 EPA FRESHWATER AQUATIC LIFE CRITERIA

(All values in ug/L except where noted)

Parameter	Chronic (24-Hour Average)	Acute (Maximum at Any Time)	Chronic[1] (4-Day Average)	Acute[2] (1-Hour Average)
Aesthetic Qualities	(Narrative statement - SEE CRITERIA DOCUMENT)			
Aldrin[P]	-	3.0	-	-
Alkalinity	(20 mg/L MINIMUM)			
Ammonia	(Criteria are pH and temperature dependent-SEE CRITERIA DOCUMENT)			
Arsenic(III)[P]	-	-	190	360
Boron	(750 ug/L for long-term irrigation on sensitive crops)			
Cadmium[4,P]	-	-	1.1/1.6/2	3.9/6.2/8.6
Chlordane[P]	0.0043	2.4	-	-
Chlorine	-	-	11	19
Chlorpyrifos	-	-	0.041	0.083
Chromium (VI)[P]	-	-	11	16
Chromium(III)[4]	-	-	210/289/370	1700/2420/3100
Color	(Narrative statement - SEE CRITERIA DOCUMENT)			
Copper[4,P]	-	-	12/17/21	18/26/34
Cyanide[P]	-	-	5.2	22
DDT[P]	0.0010	1.1	-	-
Demeton[P]	0.1	-	-	-
Dieldrin[P]	0.0019	2.5	-	-
Endosulfan[P]	0.056	0.22	-	-
Endrin[P]	0.0023	0.18	-	-
Gases, Total Dissolved	(Narrative statement - SEE CRITERIA DOCUMENT)			
Guthion	0.01	-	-	-
Heptachlor[P]	0.0038	0.52	-	-
Hexachlorocyclohexane (Lindane)[P]	0.080	2.0	-	-
Iron	1000	-	-	-
Lead[4,P]	-	-	3.2/5.3/7.7	82/137/200
Malathion	0.1	-	-	-
Mercury[P]	-	-	0.012	2.4
Methoxychlor	0.03	-	-	-
Mirex	0.001	-	-	-
Nickel[4,P]	-	-	160/222/280	1400/1999/2500
Oil and Grease	(Narrative statement - SEE CRITERIA DOCUMENT)			
Oxygen, Dissolved	(Warmwater and Coldwater Matrix - SEE CRITERIA DOCUMENT)			
Parathion	-	-	0.013	0.065
Polychlorinated Biphenyls (PCB's)[P]	0.014	2.0	-	-
Pentachlorophenol (PCP)[3,P]	-	-	3.5/13/43	5.5/20/68
pH	(6.5 - 9.0 su)	-	-	-
Selenite (inorganic)[P]	35	260	-	-
Silver[4,P]	-	4.1/8.2/13	-	-
Solids (Suspended) and Turbidity	(Narrative statement - SEE CRITERIA DOCUMENT)			
Sulfide-Hydrogen Sulfide	2.0	-	-	-
Temperature	(Species dependent criteria - SEE CRITERIA DOCUMENT)			
Toxaphene[P]	-	-	0.0002	0.73
Zinc[4,P]	-	-	110/149/190	120/165/210

1 4-day average concentration not to be exceeded more than once every 3 years on the average.
2 1-hour average concentration not to be exceeded more than once every 3 years on the average.
3 pH dependent criteria. Values presented are for 6.5/7.8/9.0 standard pH units.
4 Hardness dependent criteria. Values presented are for 100/150/200 mg/L as $CaCO_3$.
P Priority Pollutant

TABLE C-3-4

1986 EPA HUMAN HEALTH CRITERIA

Parameter	Fish and Water Ingestion (Units per liter)	Fish Consumption Only (Units per liter)	Drinking Water M.C.L.[1] (Units per liter)	Organoleptic Criteria[2] (Units per liter)
Acenapthene[P]	-	-	-	0.02 mg
Acrolein[P]	320 ug	780 ug	-	-
Acrylonitrile[P,C]	0.58/0.058/0.006 ug	6.5/0.65/0.065 ug	-	-
Aesthetic Qualities	(Narrative Statement - SEE CRITERIA DOCUMENT)		-	-
Aldrin[P,C]	0.74/0.074/0.0074 ng	0.79/0.079/0.0079 ng	-	-
Antimony[P]	146 ug	45,000 ug	-	-
Arsenic[P,C]	22/2.2/0.22 ng	175/17.5/1.75 ng	0.05 mg	-
Asbestos[P,C]	300,000/30,000/3,000 Fibers	-	-	-
Bacteria	(For Primary Recreation And Shellfish Uses - SEE CRITERIA DOCUMENT)			
Barium	-	-	1.0 mg	-
Benzene[P,C]	6.6/0.66/0.066 ug	400/40/4 ug	-	-
Benzidine[P,C]	1.2/0.12/0.01 ng	5.3/0.53/0.05 ng	-	-
Beryllium[P,C]	68/6.8/0.68 ng	1170/117/11.71 ng	-	-
Cadmium[P]	10 ug	-	0.010 mg	-
Carbon Tetrachloride[P,C]	4/0.4/0.04 ug	69.4/6.94/0.69 ug	-	-
Chlordane[P,C]	4.6/0.46/0.046 ng	4.8/0.48/0.048 ng	-	-
Chloroethyl Ether(BIS-2)[P,C]	0.3/0.03/0.003 ug	13.6/1.36/0.136 ug	-	-
Chloroform[P,C]	1.9/0.19/0.019 ug	157/15.7/1.57 ug	-	-
Chloroisopropyl Ether (BIS-2)[P]	34.7 ug	4.36 mg	-	-
Chloromethyl Ether (BIS)[C]	[37.6/3.76/0.376]X10^{-6} ug	[18.4/1.84/.184]x10^{-3} ug	-	-
2-Chlorophenol[P]	-	-	-	.1 ug
4 Chlorophenol	-	-	-	.1 ug
Chlorophenoxy Herbicides(2,4,5,-TP)(Silvex)	10 ug	-	10 ug	-
Chlorophenoxy Herbicides(2,4-D)	100 ug	-	100 ug	-
Chloro-4 Methyl-3 Phenol	-	-	-	3000 ug
Chromium (VI)[P]	50 ug	-	0.05 mg	-
Chromium(III)	170 mg	3,433 mg	-	-
Color	(Narrative statement - SEE CRITERIA DOCUMENT)		-	-
Copper[P]	-	-	-	1 mg
Cyanide[P]	200 ug	-	200 ug	-
DDT[P,C]	0.24/0.024/0.0024 ng	0.24/0.024/0.0024 ng	-	-
Dibutyl Phthalate[P]	34 mg	154 mg	-	-
Dichlorobenzenes[P]	400 ug	2.6 mg	-	-
Dichlorobenzidine[P,C]	0.103/0.01/0.001 ug	0.204/0.20/0.002 ug	-	-
1,2 Dichloroethane[P,C]	9.4/0.94/0.094 ug	2,430/243/24.3 ug	-	-
Dichloroethylenes[P,C]	0.33/0.033/0.003 ug	18.5/1.85/0.185 ug	-	-
2,4-Dichlorophenol	3.09 mg	-	-	0.3 ug
Dichloropropene[P]	87 ug	14.1 mg	-	-
Dieldrin[P,C]	0.71/0.071/0.0071 ng	0.76/0.076/0.0076 ng	-	-
Diethyl Phthalate[P]	350 mg	1.8 g	-	-
2,4-Dimethylphenol[P]	-	-	-	400 ug
Dimethyl Phthalate[P]	313 mg	2.9 g	-	-
2,4 Dinitrotoluene[C]	1.1/0.11/0.011 ug	91/9.1/0.91 ug	-	-
2,4 Dinitro-o-Cresol[P]	13.4 ug	765 ug	-	-
2,3,7,8-TCDD (Dioxin)[P,C]	[0.13/0.013/0.0013]x10^{-6} ug	[0.14/0.014/.0014]x10^{-6} ug	-	-
Diphenylhydrazine[P]	422/42/4 ng	5.6/0.56/0.056 ug	-	-

TABLE C-3-4 (continued)

1986 EPA HUMAN HEALTH CRITERIA

Parameter	Fish and Water Ingestion (Units per liter)	Fish Consumption Only (Units per liter)	Drinking Water M.C.L.[1] (Units per liter)	Organo-leptic Criteria[2] (Units per liter)
Di-2-EthylHexyl Phthalate[P]	15 mg	50 mg	-	-
Endosulfan[P]	74 ug	159 ug	-	-
Endrin[P]	1 ug	-	0.0002 mg	-
Ethylbenzene[P]	1.4 mg	3.28 mg	-	-
Fluoranthene[P]	42 ug	54 ug	-	-
Halomethanes[P,C]	1.9/0.19/0.019 ug	157/15.7/1.57 ug	-	-
Heptachlor[P,C]	2.78/0.28/0.028 ng	2.85/0.29/0.029 ng	-	-
Hexachloroethane[C]	19/1.9/0.19 ug	87.4/8.74/0.87 ug	-	-
Hexachlorobenzene[P,C]	7.2/0.72/0.072 ng	7.4/0.74/0.074 ng	-	-
Hexachlorobutadiene[P,C]	4.47/0.45/0.045 ug	500/50/5 ug	-	-
Hexachlorocycohexane-Alpha[P,C]	92/9.2/0.92 ng	310/31/3.1 ng	-	-
Hexachlorocyclohexane-Beta[P,C]	163/16.3/1.63 ng	547/54.7/5.47 ng	-	-
Hexachlorocyclohexane-Gama[P,C]	186/18.6/1.86 ng	625/62.5/6.25 ng	-	-
Hexachlorocyclohexane-Technical[P,C]	123/12.3/1.23 ng	414/41.4/4.14 ng	-	-
Hexachlorocyclopentadiene[P]	206 ug	-	-	1 ug
Iron	0.3 mg	-	.3 mg	-
Isophorone[P]	5.2 mg	520 mg	-	-
Lead[P]	50 ug	-	0.05 mg	-
Manganese	50 ug	100 ug	50 ug	-
Mercury[P]	144 ng	146 ng	0.002 mg	-
Methoxychlor	100 ug	-	0.1 mg	-
Monochlorobenzene[P]	488 ug	-	-	20 ug
Nickel[P]	13.4 ug	100 ug	-	-
Nitrates	10 mg	-	10 mg	-
Nitrobenzene[P]	19.8 mg	-	-	30 ug
Nitrosodibutylamine N[P,C]	64/6.4/0.64 ng	5,868/587/58.7 ng	-	-
Nitrosodiethylamine N[P,C]	8/0.8/0.08 ng	12400/1,240/124 ng	-	-
Nitrosodimethylamine N[P,C]	14/1.4/0.14 ng	160000/16,000/1600 ng	-	-
Nitrosodiphenylamine N[P,C]	49000/4,900/490 ng	161000/16,100/1610 ng	-	-
Nitrosopyrrolidine N[P,C]	160/16/1.6 ng	919000/91,900/9190 ng	-	-
Oil And Grease	(Narrative Statement -	SEE CRITERIA DOCUMENT)	-	-
PCB'S[P,C]	0.79/0.079/0.0079 ng	0.79/0.079/0.0079 ng	-	-
Pentachlorobenzene	74 ug	85 ug	-	-
Pentachlorophenol[P]	1.01 mg	-	-	-
Phenol[P]	3.5 mg	-	-	0.3 mg
Polynuclear Aromatic Hydrocarbons[P,C]	28/2.8/0.28 ng	311/31.1/3.11 ng	-	-
Selenium[P]	10 ug	-	0.01 mg	-
Silver[P]	50 ug	-	0.05 mg	-
Solids(Dissolved)And Salinity	-	-	250 mg	-
Tainting Substances	(Narrative Statement -	SEE CRITERIA DOCUMENT)	-	-
1,2,4,5 Tetrachlorobenzene[P]	38 ug	48 ug	-	-
1,1,2,2-tetrachloroethane[P,C]	1.7/0.17/0.017 ug	107/10.7/1.07 ug	-	-
Tetrachloroethylene[P,C]	8/0.8/0.08 ug	88.5/8.85/0.88 ug	-	-
Thalium[P]	13 ug	48 ug	-	-
Toluene[P]	14.3 mg	424 mg	-	-
Toxaphene[P,C]	7.1/0.71/0.07 ng	7.3/0.73/0.07 ng	0.005 mg	-
1,1,1-trichloroethane[P]	18.4 mg	1.03 g	-	-

TABLE C-3-4 (continued)

1986 EPA HUMAN HEALTH CRITERIA

Parameter	Fish and Water Ingestion (Units per liter)	Fish Consumption Only (Units per liter)	Drinking Water M.C.L.[1]	Organoleptic Criteria[2]
1,1,2-trichloroethane[P,C]	6/0.6/0.06 ug	418/41.8/4.18 ug	-	-
Trichloroethylene[P,C]	27/2.7/0.27 ug	807/80.7/8.07 ug	-	-
2,4,5-trichlorophenol	2,600 ug	-	-	1 ug
2,4,6-trichlorophenol[P,C]	12/1.2/0.12 ug	36/3.6/0.36 ug	-	2 ug
Vinyl Chloride[P,C]	20/2/0.2 ug	5246/525/52.5 ug	-	-

1 M.C.L. is maximum contaminant level

2 To control undesirable taste and odor quality of ambient water. It should be recognized that organoleptic data have limitations as a basis for establishing water quality criteria, and have no demonstrated relationship to potential adverse human health effects.

P Priority Pollutant

C Carcinogenic pollutant. For the maximum protection of human health from the potential carcingenic effects resulting from exposure to these pollutants, the ambient water concentrations should be zero. The levels presented are for $10^{-5}/10^{-6}/10^{-7}$ incremental increase of cancer risk over the lifetime.

Additional EPA water quality criteria

C.3.26. Aesthetic qualities. All waters free from substances attributable to wastewater or other discharges that:

1. settle to form objectionable deposits;
2. float as debris, scum, oil, or other matter to form nuisances;
3. produce objectionable color, odor, taste, or turbidity;
4. injure or are toxic or produce adverse physiological responses in humans, animals or plants; and
5. produce undesirable or nuisance aquatic life.

C.3.27. Color. Waters shall be virtually free from substances producing objectionable color for aesthetic purposes; the source of supply should not exceed 75 color units on the platinum-cobalt scale for domestic water supplies, and increased color (in combination with

turbidity) should not reduce the depth of the compensation point for photosynthetic activity by more than 10 percent from the seasonally established norm for aquatic life.

C.3.28. Dissolved oxygen. Water should contain sufficient DO to maintain aerobic conditions in the water column and, except as affected by natural phenomena, at the sediment-water interface. Numerical criteria are available for varying aquatic life stages for coldwater and warmwater species.

C.3.29. Fecal coliform bacteria.

1. Bathing waters. Based on a minimum of five samples equally spaced over a 30-day period, the geometric mean of the E. coli density should not exceed 126 per 100 mL for freshwater bathing. For the above sampling period, the geometric means of the enterococci density should not exceed 33 and 35 per 100 mL for freshwater and marine bathing, respectively.

2. Shellfish harvesting waters. The median fecal coliform bacterial concentration should not exceed 14 MPN/100 mL for the taking of shellfish, with not more than 10 percent of samples exceeding 43 MPN/100 mL.

C.3.30. Oil and grease. For domestic water supply: virtually free from oil and grease, particularly from the tastes and odors that emanate from petroleum products. For aquatic life: (1) levels of individual petrochemicals in the water column should not exceed 0.01 times the lowest continuous flow 96-hour LC_{50} to several important freshwater or marine species, each having a demonstrated high susceptibility to oils and petrochemicals; (2) levels of oils or petrochemicals in the sediment which cause deleterious effects to the biota should not be allowed; and (3) surface waters shall be virtually free from floating nonpetroleum oils of vegetable or animal origin, as well as petroleum derived oils.

C.3.31. Settleable and suspended solids. Freshwater fish and aquatic life: settleable and suspended solids should not reduce the depth of the compensation point for photosynthetic activity by more than 10 percent from the seasonally established norm for aquatic life.

C.3.32. Tainting substances. Materials should not be present in concentrations that individually or in combination produce undesirable flavors which are detectable by organoleptic tests performed on the edible portions of aquatic organisms.

EPA surface water quality criteria

C.3.33. The LDEQ general criteria state that "all waters of the state shall be capable of supporting desirable diversified species of fish,

shellfish and wildlife." Therefore, the EPA criteria for freshwater aquatic life, Table 3, are held to apply to all surface waters. Also, EPA criteria for the protection of human health apply to all surface waters.

EXISTING WATER QUALITY

C.3.34. Water quality data on the stream segments under investigation for this study were either out-dated or non-existent. Therefore, water and sediment samples were collected by the News Orleans District U.S. Army Corps of Engineers on October 26, 1989. Thus, these samples are indicative of moderate air temperatures, dry weather and low flow conditions. The samples were analyzed by the New Orleans District Water Quality Lab for various physical, chemical and bacteriological parameters. Elutriate analyses, in which 1 part sediment and 4 parts water from each site were vigorously mixed for thirty minutes, allowed to settle for one hour and then centrifuged, were also performed in order to determine the possible effects of channel enlargement and/or clearing and snagging. The results of the analyses can be found in Annex _ to this report. Since the samples are one time grab samples they cannot be compared directly to most of the water quality criteria and standards, which stipulate minimum sampling intervals and durations. However, a comparison is useful in gaining insight into the possible impacts of implementing East Baton Rouge Parish projects.

General

C.3.35. General. The general character of a water body can be gaged by the examination of various chemical and physical parameters including those indicating available oxygen concentration and oxygen demands, hydrogen ion concentration, temperature, dissolved solids content and the concentrations of major inorganic ions and nutrients. DO historically has been the single major constituent of interest in water quality investigations. It has generally been considered significant for protecting aesthetic qualities of water as well as for maintaining fish and other aquatic life. DO concentrations are an important gage of existing water quality and the ability of a water body to support a well-balanced aquatic fauna.

C.3.36. Of the 15 sites sampled, twelve had DO concentrations below the state standard of 5.0 mg/L. Only Jones Creek, Weiner Creek and Blackwater Bayou had DO concentrations above 5.0 mg/L. However, high DO concentrations seem to be the exception rather than the rule for these stream segments, especially during low flow conditions. Also, all of the DO concentrations were within the range of DO values found in the Comite and Amite Rivers and in Bayou Manchac. Only one site, Jones Creek, had a pH value outside the range of pH values cited in the state standards. All sites sampled had temperatures less than the maximum 32 ^{o}C stated in the state standards. The LDEQ has set guidelines for maximum turbidity levels in the Amite River at 50 neophelometric

turbidity units (NTU). Two of the sites sampled, Blackwater Bayou Tributary #1 and Beaver Bayou Tributary, had turbidity levels greater than 50 NTU. For comparison, 20 to 25 percent of the Amite River turbidity levels exceeded 50 NTU. No turbidity data for the Comite River could be found. Nine percent of the Bayou Manchac turbidity levels exceeded 50 NTU.

C.3.37. Two macronutrient forms, that is, chemicals necessary for the growth and reproduction of rooted or floating flowering plants, ferns, algae, fungi, or bacteria are particularly significant in the quality characterization of a water body: un-ionized ammonia because of its toxicity to aquatic life, and phosphate because of its role in the accelerated aging and enriching (eutrophication) of lakes and estuaries. EPA has established freshwater aquatic life criteria, dependent on pH and temperature for un-ionized ammonia. To prevent development of biological nuisances and to control accelerated or cultural eutrophication, EPA recommends that total phosphate as phosphorus not exceed 50 ug/L in any stream at the point where it enters any lake or reservoir. The recommended criteria state further that total phosphorus should not exceed 100 ug/L in streams or other flowing waters not discharging directly to lakes or impoundments.

C.3.38. Four sites, Jones Creek, Lively Bayou, Beaver Bayou Tributary and Beaver Bayou Lateral had un-ionized ammonia concentrations which exceeded the EPA chronic freshwater aquatic life criteria. However, the chronic criteria is stated as "a 4-day average concentration not to be exceeded more than once every three years on the average". Thus, these contraventions can only be regarded as "possible" exceedances. None of the sites had un-ionized ammonia concentrations which exceeded the EPA acute freshwater aquatic life criteria. All of the 15 sites sampled had total phosphorus concentrations which equalled or exceeded the EPA recommended criteria of 100 ug/L for waters not discharging directly into lakes or impoundments. While total phosphate as phosphorus has not been analyzed in the Amite River, 93 percent of the total phosphorus concentrations exceeded the EPA recommended criteria of 100 ug/L. The Comite River and Bayou Manchac had percent exceedances of 100 and 36, respectively for total phosphorus concentrations.

Bacteriological

C.3.39. The direct search for a specific pathogen in water is too uneconomical, slow, and unwieldly for routine control purposes. Instead, water is examined for an indication of fecal contamination, and when such indication is found, it is assumed that the water is potentially dangerous. The presence of coliform organisms in a water sample is regarded as evidence of such pollution and has served for many years as a basis for water quality criteria. The coliform group of organisms includes, by definition, "all aerobic and faculative anerobic, Gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose (milk sugar) with gas formation within 48 hours at $35^{o}C$."

Bacteria of this group have been associated with both the feces of warmblooded animals and with soil. The fecal coliform bacteria, which make up a portion of the total coliform group, are determined by an elevated temperature test: being able to grow at 44.5°C and ferment lactose, which produces acid and gas. Using fecal coliform bacteria has proven to be of more sanitary significance than using total coliform bacteria because fecal coliforms are restricted to the intestinal tract of warm-blooded animals. The presence of bacterial, viral, protozoan, and possibly fungal species that are pathogens and possess the potential to infect man and other organisms is indicated by the presence of the fecal coliform group of bacteria. Thus, the number of fecal coliforms present indicates the degree of health risk associated with using the water for drinking or swimming.

C.3.40. In 1989 the EPA revised its bacteriological ambient water quality criteria for recreational waters. Specifically, the EPA believes that E. coli and enterococci indicators are superior to the fecal coliform group. Either E. coli or enterococci may be used for fresh waters. These revised criteria are presented in Paragraph 1.b.(1)(d). As no E. coli and enterococci were analyzed for in this study, a comparison to these revised EPA criteria is not possible at this time.

C.3.41. Of the 15 sites sampled only four, North Branch Ward Creek, Jones Creek Tributary, Blackwater Bayou at Carey Road and Lively Bayou Tributary had fecal coliform levels less than or equal to the state's primary contact recreation bacterial standard of 400 per 100 mL. Again, because of the sampling interval and durations specified in the standard, direct comparison to the standard is not possible. However, low fecal coliform levels seem to be the exception rather than the rule. For comparison, more than 63 and 71 percent of the fecal coliform levels in the Amite River and Bayou Manchac, respectively were above the 400 per 100 mL standard. The little data available for the Comite River also suggests that the fecal coliform levels are in violation of the state standard.

Agricultural And Industrial Chemicals

C.4.42. Agricultural and industrial chemicals, such as pesticides and volatile and semi-volatile organic compounds, are discharged to surface waters from several sources. Sources include: tank and barge cleaning activities, spillage during materials handling operations, runoff discharged as stormwater from industrial sites, National Pollution Discharge Elimination System (NPDES) permitted discharges, and runoff from agricultural lands.

C.4.43. The pesticide scan by the water quality lab did not detect any pesticide concentrations at or above 0.010 parts per billion (ppb). The scan included the following pesticides: aldrin, BHC, chlordane, DDT, DDE, DDD, dieldrin, endrin, endosulfan, heptachlor, heptachlor epoxide, lindane, methoxychlor, mirex and PCB's. It should be noted that the

limit of detection, 0.010 ppb is above the EPA chronic freshwater aquatic life criteria for chlordane, DDT, dieldrin, endrin, heptachlor and mirex. Thus, violations of the chronic criteria for these pesticides can not be determined from this analysis. However, the 0.010 ppb detection limit is below all of the EPA acute freshwater aquatic life criteria for the pesticides included in the scan.

C.4.44. Industrial compounds may be present in surface waters in concentrations well below the level that would damage aquatic organisms. However, some organisms are noted for their ability to bioconcentrate such compounds to levels that may be dangerous to consumers of aquatic life. Consequently, the potential effect on consumers, including man, from ingesting organisms exposed to industrial chemicals must be considered. In Table 4 criteria for suspect or proven carcinogens are presented as ambient water concentrations associated with a range of estimated incremental cancer risks to human. Because methods do not now exist to establish a threshold for carcinogenic effects, the EPA policy is that there is no scientific basis for estimating "safe" levels for carcinogens. Therefore, for carcinogens, the recommended ambient water concentration for maximum protection of human health is zero. Estimating health risks associated with human exposure to environmental pollutants requires predicting the effect of low doses over a period of a lifetime. The range of concentrations presented in Table 4 corresponds to incremental cancer risks of 10^{-7} to 10^{-5} over a lifetime. Essentially, an incremental cancer risk of 10^{-7} correspond to one additional case of cancer in a population of 10 million persons, and 10^{-5} corresponds to 1 in 100,000. Specified risk concentrations are estimated using the following basic assumptions:

- a 70 kilogram (154 pound) male as the exposed individual
- average daily consumption of 6.5 grams (0.23 ounces) of freshwater and estuarine fish and shellfish
- average daily ingestion of two liters (0.53 gallons) of water

Trace Metals And Selected Trace Inorganics

C.3.45. Trace metals and trace inorganics enter surface waters via several routes and from several sources. Fallout and washout of contaminants from the polluted atmosphere of urban and highly industrialized areas can be significant nonpoint sources. Metallic salts leached from soils and natural ore deposits can also contribute significantly to the trace metal content of a surface water body. For the most part, heavy waste loading to project area surface waters is a consequence of continuing proliferation of industrial establishments adjacent to the river and general industrialization of the New Orleans-Baton Rouge urban corridor. Several metals that are frequent components of many industrial wastewaters and urban stormwater runoff

have been detected in high concentrations. These metals are rarely found in more than trace quantities in unpolluted waters.

C.3.46. For metals only, EPA recommends comparing its freshwater aquatic life criteria to the dissolved fraction of the metal, not to the total recoverable fraction. There were no acute or chronic freshwater aquatic life criteria violations for arsenic, cadmium, chromium, copper, nickel and zinc for all of the sites sampled. Only one site, Dawson Creek exceeded the EPA chronic freshwater aquatic life criteria for mercury. However, all of the other sites had mercury concentrations below the detection limit of 0.5 ppb, which is above the EPA chronic freshwater aquatic life criteria of 0.012 ppb. Lead concentrations exceeded the EPA chronic aquatic life criteria at the following sites: Jones Creek, Blackwater Bayou at Carey Road, Blackwater Bayou Tributary and Beaver Bayou Tributary. In comparison, the Amite River at Port Vincent exceeded the acute criteria 60, 69, 39 and 6 percent of the time for cadmium, copper, lead and mercury, respectively. This same site exceeded the chronic criteria for the above parameters 71, 74, 97 and 94 percent of the time, respectively. Since little or no dissolved metal concentrations were available in the Amite River, the above exceedances refer to the total concentration of the metals, not the dissolved fraction. No trace metal data is available for the Comite River.

Bottom Sediment

C.3.47. Bottom sediment. Concentrations of materials in solution normally represent only a fraction of the chemical load transported by a stream at any given instant. The amount and nature of suspended sediment being transported most often determines the concentrations of several chemical constituents in the dissolved phase. Thus, suspended sediment can be the major transport mechanism for many chemical species because of adsorption onto the enormous aggregate surface area of silts, clays, and organic particulates in suspension. It is generally recognized that silt, clay, and organic matter act in concert in the sorption process, and that the relative contribution of organic and inorganic surfaces to adsorption depends on the organic coating on clay particles.

C.3.48. As stream velocity falls below about 0.6 m/s, the largest particles (mostly silt and sand) begin to settle from suspension. These settled particles, with associated chemical constituents, are deposited on streambeds to await resuspension and transport when stream velocity and flows again increase. Because high flows are generally seasonal in nature, sampling and analysis of unconsolidated bottom material can sometimes reveal seasonal or short-term trend data. Long-term trends may become apparent by appropriately scheduled seasonal sampling over a period of several years. Examining bottom material data can often reveal contaminant problems not readily apparent by reviewing data from periodic surface water sampling alone.

C.3.49. There is very little existing sediment data for the Amite River and Bayou Manchac with which to compare the results of this analysis. No sediment data exists for the Comite River. Only one site, Lively Bayou Tributary had chlorinated pesticide concentrations in the sediment above the detection limit of 0.010 ppb. The aldrin concentration at this site was 44 ppb. One time sampling done along Bayou Manchac in 1977 detected sediment concentrations of chlorinated pesticides, such as chlordane as high as 91 ppb. No aldrin concentrations were analyzed in Bayou Manchac. One time sampling in the Amite River in 1976 did not detect any chlorinated pesticides. However, the detection limit used in the analysis is unknown. Sediment metal concentrations at the 15 sites sampled were of the same order of magnitude of those found in the sediment of the Amite River at Port Vincent.

PROJECT IMPACTS

C.3.50. Channel improvements are often used to increase stream capacity for flood control. The major types of channel improvements for flood control are channel enlargement, clearing and snagging, and channel realignment. Channel improvements have resulted in many positive benefits besides the primary benefit of flood protection of urban areas. However, channel improvements have also had adverse impacts on the environment and water quality in the project area.

C.3.51. The selected Beaver Bayou and tributaries plan consists of enlarging the main stem and two tributaries. Concrete lining of a small channel section on the main stem is also proposed. All earthen channel improvements will be lined with a geosynthetic mat for erosion control.

C.3.52. The selected Blackwater Bayou and tributaries plan consists of enlarging the main stem and two tributaries. All channel improvements will be lined with a geosynthetic mat for erosion control.

C.3.53. The selected plan for Jones Creek and tributaries consists of clearing and snagging and/or widening of a downstream segment of the Jones Creek main stem. Improvements are concrete lined for Jones Creek, Weiner Creek, Jones Creek Tributary, Lively Bayou, and Lively Bayou Tributary.

C.3.54. The selected plan for Bayou Fountain consists of clearing and sagging, and/or enlarging the main channel. A small segment of Bayou Fountain is to be concrete lined. A geosynthetic mat will be used in spot locations when required to control erosion.

C.3.55. The tentative plan for Wards Creek and tributaries consists of clearing and snagging and concrete lining.

General

C.3.56. Site preparation activities and construction of temporary access roads will result in large denuded areas from which soils will readily erode. Furthermore, equipment operations and spills during equipment maintenance operations can result in petroleum products finding their way into the stream segments. The initial clearing of the land removes the vegetative cover and permits the rainfall to strike the bare land surface which leads to increased surface runoff and severe erosion. Runoff and erosion adds a great deal of soil solids to a stream in the form of turbidity and increased sedimentation. Denuded areas have been shown to lose large quantities of dissolved minerals, particularly sodium, potassium, calcium, magnesium, nitrates and phosphates. The primary effect of these mineral nutrients is the stimulation of plant growth. Secondarily, this enrichment stimulates animal production, decomposition, and increased oxygen demand. However, devegetation may lead to only temporary nutrient enrichment, in that once the minerals are leached out and eroded they are gone. If the trees and brush cleared from the land are burned in the floodplain, the ashes, which are highly alkaline, may enter the stream segments and cause an immediate increase in the pH of the water.

C.3.57. Where channels will be concrete lined, there is also the concern that chemical substances will leach out into the waterbodies. Mostly carbonates and hydroxides of calcium and magnesium come from cement mixing operations and from the cement itself. Although the greatest leaching occurs during and immediately after construction, long-term leaching undoubtedly takes place.

C.3.58. As stated earlier, turbidity levels will increase significantly as a result of runoff and erosion of cleared land. Turbidity affects the water quality of a stream in several ways. The suspended sedimentary particles decrease the light penetration and interferes with the photosynthetic production of oxygen. At the same time these particles absorb solar energy from the sunlight and transform this energy into heat, thus elevating the temperature of the stream. The fact that oxygen is less soluble in warm water than in cold water coupled with the decreased photosynthetic oxygen production can result in decreased oxygen levels.

C.3.59. Environmental protection practices normally implemented at construction sites can be effective in reducing the gross erosion and soil loss that can cause shoaling and elevated levels of suspended solids at some relatively short distance downstream of the project site.

C.3.60. Although flood control channel cross sections are usually designed to minimize erosion problems, some channel stabilization and bank protection is required on nearly all flood control channels. Vegetation is widely used for these purposes. Woody vegetation is usually restricted to banks, but grass may be used to line intermittent

channels such as the tributaries to the main stream segments. In order to reduce soil erosion during floods, construction of grassed channels should be scheduled to allow for at least one complete growing season after seeding.

C.3.61. Both channel enlargement and clearing and snagging remove stream bank cover which decreases the amount of shade on the stream, thus elevating the temperature of the stream. This reduced stream bank cover helps to further elevate the increased runoff and erosion problem. Often, as in the New Orleans District of the U.S. Army Corps of Engineers, this riparian cover is eliminated by applying herbicides such as 2,4 D. Such herbicides are invariably carried into the water stream. However, application techniques such as the use of microfoil booms to keep the droplets the same size, which in turn reduces the amount of drift of the herbicide, help in reducing the amount of herbicide needed to defoliate the banks.

C.3.62. Also, both channel enlargement and channel snagging, disturb the bottom sediment of a stream. The primary results are the creation of deep holes or linear channels and the temporary suspension of large clouds of sedimentary particles. The nature of pollution caused by disturbing the bottom sediment is in a large measure dependent on the material being disturbed. If there is a large amount of organic matter (trees, roots, shrubs, etc.) in the channel or on its banks, then decomposition products of this matter may be present. Also, most of the sediments removed or disturbed are from the deep unoxidized layer of soil and are thus in a chemically reduced state. Such materials have very high chemical and biological oxygen demands. The sedimentary particles and interstitial waters disturbed may contain immediately toxic materials such as hydrogen sulfide, methane, and a variety of organic acids, ketones, aldehydes, etc., as well as heavy metals and pesticides which exhibit persistent toxic effects. As a result of runoff and erosion, similar experiences are observed when the bed material is placed along the side of the stream.

C.3.63. While these adverse impacts are temporary in nature and will diminish soon after the completion of the project, annual or regular maintenance may prevent the shade cover of the stream from reestablishing itself. Thus, elevated stream temperatures could be a long term impact of these alternatives.

C.3.64. When channel enlargement is completed, low flows will soon establish themselves in a low-flow channel within the enlarged channel. However, higher water temperatures caused by the loss of shade could result in lower dissolved oxygen levels. No significant differences in nutrient and contaminant fecal levels are expected since these levels are mainly related to types of land use and their distribution within the drainage basin. However, in those projects where reduced flooding encourages urban development or widespread clearing of land and expansion of crop production, concomitant increases in nutrient and

contaminant fecal levels can be expected.

C.3.65. Short term turbidity increases are to be expected in the Amite and Comite Rivers and Bayou Manchac. No significant impacts on the coastal zones in the area are expected as a result of these alternatives. Groundwater levels are affected when the stage-discharge relationship is altered or when streambeds are lowered. These effects are most notable in low gradient streams in porous soils. However, the decrease in groundwater levels is usually minimal and very localized.

C.3.66. There are several construction techniques which will greatly reduce these adverse environmental effects with little loss in flood control. The most promising of these techniques is the single-bank modification approach. This technique applies to both bank clearing and channel enlargement. Some key aspects are: 1) that the existing channel alignment is followed; 2) clearing and widening should generally be restricted to the northerly or easterly bank so that the channel remains shaded as much as possible, and 3) existing vegetation on the opposing bank is disturbed as little as possible, although snags that would interfere with flow or trees that might fall into the channel may be removed. Other protective measures are the revegetation of disturbed or disposal areas and the wise use of existing access routes within the project area. Also buffer strips of vegetated land as wide or wider than the channel should be established on both sides of the channel.

Elutriate Analyses

C.3.67. As mentioned previously, the nature of pollution caused by disturbing the bottom sediment by channel enlargement or clearing and snagging is dependent on the material being disturbed. Elutriate analyses were therefore undertaken to try to gain a better understanding of the impacts associated with the East Baton Rouge Parish projects. Since the diluent and assimilative capacities of the streams are not accounted for in the elutriate concentrations, these results are representative of localized, short term, worst case scenarios. Elutriates are also more characteristic of hydraulic dredging operations than they are of dragline operations. Futhermore, elutriate samples represent the dissolved fraction of the constituent and should therefore be compared to the dissolved ambient water concentration.

C.3.68. Except for total phosphorus, the nutrient concentrations in the elutriate samples were generally higher than the nutrient concentrations in the ambient water samples. Total phosphorus concentrations in the elutriate samples were however, generally much lower than those found in the ambient water samples. As for the ambient water samples, no elutriate samples had chlorinated pesticide concentrations above the detection limit of 0.010 ppb.

C.3.69. Of the metals sampled, only elutriate mercury and copper concentrations exceeded the EPA chronic freshwater aquatic life

criteria. No elutriate samples exceeded the EPA acute freshwater aquatic life criteria for the metals sampled. As for the ambient water mercury concentrations, most of the sites had elutriate mercury concentrations below the detection limit of 0.5 ppb, which is above the EPA chronic freshwater aquatic life criteria. However, five sites including Jones Creek Tributary, Blackwater Bayou at Carey Road, Beaver Bayou Lateral, Beaver Bayou Tributary and Lively Bayou Tributary had elutriate mercury concentrations above the EPA chronic freshwater aquatic life criteria. These five sites all had negligible flows with very little water in their channels. Thus, at low flow conditions much of the work would be accomplished above the water line. Two of the fifteen sites, Dawson Creek and Ward Creek, had elutriate copper concentrations which exceeded the EPA chronic freshwater aquatic life criteria. Considering the durations and sampling intervals specified in the criteria along with the inherent conservatism of the elutriate tests, it is likely that there will be no significant adverse water quality impacts associated with the resuspension or redesolving of heavy metals in the stream bed material.

Conclusions

C.3.70. Thus, in the short term there will be minor adverse water quality impacts related to erosion problems, and resuspension or redesolving of pollutants in the stream bed material. During low flows, long term impacts will be related to loss of shade, resulting in elevated stream temperatures and consequent lower DO levels. By and large, especially at times of moderate to high flows, channel improvements facilitate water flow and flushing. As a result of the increased assimilative capacity of the stream, the water quality with respect to many parameters, and particularly dissolved oxygen content, may increase after the channel improvements. Also, both snagging and channel improvement may remove many problems materials, thus speeding up the recovery time of a stream.

SECTION 4 - GEOLOGY

C.4.1. The Study area is located in the east-central and southern one third of East Baton Rouge Parish, Louisiana. Specific areas of concern are the Blackwater Bayou and Beaver Bayou watersheds in the east-central part of the parish and the Jones Creek, Lively Bayou, Ward Creek, Dawson Creek, and Bayou Fountain watersheds in the southern one third of the Parish. This is an area of low relief consisting of broad uplands of Pleistocene Prairie Formation except for Bayou Fountain which approximately marks the contact between the Pleistocene upland escarpment and backswamp deposits of the alluvial plain to the southwest. Elevations on the Prairie Formation average +50 to +55 feet and +10 to +20 feet on the alluvial plain.[1]

C.4.2. The Prairie Formation is composed of varying amounts of gray to brown clay, silt, sand, and some gravel reaching a maximum thickness of approximately 400 feet. These deposits dip gently toward the coast. The Prairie Formation may form bluffs above the alluvial plain of 20 to 60 feet. The alluvial plain generally consists of a topstratum of clay and silt with a substratum of silty sand, sand, and some gravel reaching a maximum thickness of approximately 600 feet. Natural levee deposits are found along major rivers and streams and reach a maximum of 25 feet thick adjacent to the Mississippi River.

C.4.3. Loess is found throughout the study area in various thicknesses. Where loess does occur, it consists of brown clay and silt with a thickness of approximately 15 feet or less.

C.4.4. In all the watersheds under consideration, Pleistocene Prairie complex deposits occur as the major constituent between the rivers and streams. This is a subdivision of the Prairie Formation described by Autin and McCulloh as alluvial deposits of ancestral streams. These deposits are comprised of sand and clay. Along the stream valleys Holocene alluvium occurs adjacent to the Prairie Formation deposits. At the southern end of Beaver Bayou, Pleistocene Prairie complex point bar remnants are found between the Prairie Formation and the Holocene alluvium. These point bar remnants are a subunit of the Prairie formation and are composed of sandy alluvial deposits. The southeast end of Jones Creek had undifferentiated escarpment deposits between the Prairie Formation and the Holocene alluvium. The escarpment deposits occur on the Prairie Formation bluffs and are comprised of colluvium, slope debris, and/or washings from the adjacent Prairie Formation deposits. (See Autin and McCulloh, 1991.)

1 All elevations are NGVD.

C.4.5. Bayou Fountain watershed differs slightly in the surface soil types surrounding it due to the fact that it lies at the foot of the Prairie Formation escarpment near the Mississippi River. On the northeast side is the Pleistocene Prairie complex lower surface deposits and undifferentiated escarpment deposits with holocene alluvium at the confluence between Bayou Fountain and other streams. On the southwest side, Mississippi River backswamp and natural levee occurs. The escarpment deposits may be extensively gullied, and have sheetflow erosion, mass movement of soil materials, and soil piping due to oversteepened slopes (slopes >8%). (See Plate C-105).

C.4.6. The watershed areas are predominately poorly drained loamy soils with some moderately well drained loamy soils. Some problem soil conditions of the area involve soils of low bearing capacities and sandy subsoils. The low bearing capacity soils have fine grained soil texture with shrink-swell clay minerals and high moisture content causing the soils to be relatively weak. These soils may not uniformly support loading. Sandy subsoils are areas of coarse grained soils of high permeability which are good for construction but poorly suited for waste disposal, sewage lagoons, and septic tank fields. The areas of low bearing capacity soils are fairly frequent and too numerous to mention individually. The only known area of sandy subsoil in the watershed areas is along Beaver Bayou just north of the Denham Springs-Scotlandville fault. The loess deposits found in the study area are susceptible to erosion due to their lack of cohesion. (See Autin and McCulloh, 1991).

C.4.7. There are numerous aquifers in the subsurface of East Baton Rouge Parish with 10 principle aquifers used in public supply. The aquifers are the alluvial aquifer, the University Sand, the 400 foot sand, the 600 foot sand, 800 foot sand, the 1200 foot sand, the 1500 foot sand, the 2000 foot sand, the 2400 foot sand, and the 2800 foot sand. The alluvial aquifer and the university Sand merge and generally act as one hydrologic unit discharging into the Mississippi river when the river is low and recharging when the river is high. The alluvial aquifer is 50 to 100 feet below the surface and is overlain by clay and silt. The University Sand is approximately 235 to 390 feet below the surface. The 400 and 600 foot sands also merge, and in general behave as a single unit and are recharged by rainfall, infiltration from the north where the sands are believed to outcrop, and indirectly by infiltration from the river. The aquifers consist of sand and gravel units with food permeability. It should be noted that the aquifers may pinch out and may not underlie the entire area.

C.4.8. The Baton Rouge fault occurs in this area as a normal fault trending east to west and dipping steeply to the south. The upthrown side is to the north and the downthrown side is to the south. This fault tends to act as an impermeable barrier to the 8 deepest aquifers. There is some salt water intrusion in the aquifers especially on the south side of the fault, although some salt water intrusion is also

believed to come from the west. Otherwise, the aquifers do provide fresh water. Movement of the downthrown side of the fault is about 0.02 ft/yr and should continue in the future. There is little subsidence north of the fault, but there is some subsidence immediately south of the fault which decreases with increasing distance south from the fault. Another potential fault zone, the Denham Springs-Scotlandville Fault, has been mapped in previous studies. It is a normal fault trending east to west and dipping steeply toward the south. This fault is not known to be a barrier to water movement in the aquifers. The faults are shown on Plate C-105.

C.4.9. Pumping of fresh water from the aquifers in the Industrial District of Baton Rouge has caused some subsidence, but the areas of subsidence are generally outside of the watershed areas. The extreme northwest regions of the Jones Creek and Ward Creek watersheds may reach into some areas experiencing subsidence. Regional subsidence occurs in the area at a rate of about 0.01 ft/yr (Wintz, Kazmann, and Smith, 1970).

C.4.10. The near-surface water table will be lowered in areas adjacent to channel enlargement. The magnitude of this lowering will be governed primarily by the hydraulic conductivity of the soils adjacent to the channel. In addition, as a result of this lowering, the potential for induced or aggravated subsidence will be enhanced. Also, lowering of the water table due to channel enlargement will increase the potential for "spring sapping" (headward erosion) in the loess and other coarser grained materials adjacent to the streams. With time the near-surface water table will reestablish relative to the new bank cut width. The landward migration will equal the cut dimension and any subsidence induced will be minimal.

C.4.11. There is limited subsurface geologic information in the study area. Project-specific borings will be required to provide detailed geologic information at site-specific locations within the study area. Of particular interest is the delineation of loess deposits in the area.

C.4.12. References:

Autin, Whitney J. and McCulloh Richard P., 1991 "Geologic and Derivative Engineering Geology hazard Maps of East Baton Rouge Parish, Louisiana", Louisiana Geological Survey open file series no. 91-01 for Parish of East Baton Rouge, Department of Public Works.

Dance, Ray E. et. al., 1968, "Soil Survey of East Baton Rouge Parish, Louisiana", United States Department of Agriculture, Soil Conservation Service in cooperation with Louisiana Agricultural Experiment Station.

Meyer, R.R. and Rollo, J.R., 1965 "Salt-Water Encroachment Baton Rouge Area, Louisiana", Louisiana Department of Conservation Geological Survey

and Department of Public Works in cooperation with the United States Geological Survey, Water Resources Pamphlet No. 17.

Morgan, C.O. and Winner, M.D., Jr., 1964, "Salt-Water Encroachment in Aquifers of the Baton Rouge Area - Preliminary Report and Proposal", Louisiana Department of Public Works in cooperation with the United States Geological Survey.

Smith, Charles G., Jr., 1969, "Geohydrology of the Shallow Aquifers of Baton Rouge, Louisiana", Louisiana Water Resources Research Institute Bulletin GT-4.

Wintz, William A., Jr., Kazmann, Raphael G. and Smith, Charles G., Jr., 1970, "Subsidence and Ground-Water Offtake in the Baton Rouge Area", Louisiana Water Resources Research Institute Bulletin 6.

SECTION 5 - SOILS

GENERAL

C.5.1. Soil boring data from the city and local consultants' projects in the project area were used to tipify the soils within the project area. Selected borings from that group are presented herein on plates C-94 through C-104 and the location of these selected soil borings are shown on plate C-105. Additionally the city of Baton Rouge has developed a series of construction hazard maps indicating the basic soil types for the city; along with the soil conservation service soil type maps these were used to develop typical geology of the project area. The soil profile for the Ward Creek and Jones Creek water sheds is typified by a layer of Loess soil above a stiff Pliestocene age clay. The Beaver Bayou and Blackwater Bayou drainage area is typified by an erodible layer of sand and loess type soils above a stiff Pliestocene clay layer. The Bayou Fountain water shed is in a back swamp of the Mississippi River and the soil is predominantly clay with a thin layer of the outwash soil from the bluffs above.

CHANNEL DESIGN

C.5.2. The soils in the four water sheds other than Bayou Fountain are highly erodible down to the level of the stiff clay layer near the bottom of the existing channel. In many cases the channel has claimed the adjacent landowners fences which are parallel to the channel bank. The channels as they exist now appear to have a berm or secondary bank within the channel which is probably, from inspection, eroded soil which has redeposited in a mixed matrix with some clay and debris included. The secondary bank or berm will no doubt be eroded and redeposited with flood events. In some cases the existing channel exceeds the design channel due to erosion. If filling to obtain the design cross-section is necessary, fat clay will be required to be compacted into the section. This soil type will be mined off site. The insitu soil type may be considered for use in a reinforced earth type approach for regaining the design cross-section.

Channel Slopes

C.5.3. For all drainage basins except Bayou Fountain, the channels will require protection from erosion due to both cross flow and flow parallel to the slope. The slopes paved with concrete may be cut to 1 vertical on 3 horizontal and normal maintenance assumed as biyearly cleaning out of debris and cleaning of the weep holes. Slopes not paved will require cuts not steeper than 1 vertical on 3.5 horizontal and will undergo bank sloughing and recession requiring yearly bank work and more costly maintenance. This is discussed in subsequent paragraphs. In the Bayou

Fountain Basin the slopes may be cut to a 1 vertical on 3 horizontal.

Slope Protection

C.5.4. For Beaver and Blackwater Bayous some of the slopes will be protected with a Turf Reinforcement Mat (geotextile). In the detailed design phase the Turf Reinforcing Mat will be placed only as needed and will not be placed wherever the soil conditions will allow. The portion of the bank that is submerged long enough to prevent the growth of grass will have rock to maintain the mat on the slope and pin the toe. A portion of the Ward Creek and most of the Jones Creek Basins will be concrete slope paved due to the dense population along their length and the increased maintenance requirement and difficulty of performing maintenance in the confined space for unsurfaced channels. The slope pavement will require a drainage system behind the pavement with weep holes through the pavement and including a geotextile separator. In all the basins except the Bayou Fountain area the use of unsurfaced slopes with clearing and snagging will induce added maintenance to the slopes. That is, if the channel debris such as trees, snags or stumps are removed the velocity will increase and deposited soil material at the toe of the slopes will be eroded away thereby inducing slope sloughing and recession to the top of bank; therefore additional cost will be induced. Selective clearing and snagging will be practiced to leave the root mats of certain brush to reduce bank recession. In the Bayou Fountain Basin unsurfaced slopes may be used with a 1 vertical on 3 horizontal side slope and bank recession will be small. In the Bayou Fountain Basin the erodible material is thinner and of a different soil type; it is outwash material from the Loess slopes above, with clays included in the matrix.

Bank Recession Rates

C.5.5. The map shown on Plate C-105 indicates the best estimate of thickness of loess (Silt/Silty Clay). These soils are highly erodible, at hydraulic velocities of 2.5 to 3.5 feet per second they begin to move. Although to date we have not taken planned soil borings, we have data obtained from others in the project area to use for a basis for our assumptions. Using these data we have developed Plate C-105 indicating the thickness of Loess soils. These highly erodible soils exist over most of the project area as shown on Plate C-105. We have no exact methodology to estimate the bank loss rate which will be experienced. However our best estimate is as follows:

a. Most Likely Bank Loss Estimate. The Loess/silty material will experience losses at each inundation that is 4 hours or longer and has a velocity which exceeds 2.5 feet per second. This loss will be progressive, i.e. the first inundation will cause a slight loss at the clay/Loess interface of about 2 foot and very little movement of the top of bank. The second inundation and third inundation will likewise cause about 2 foot each of bank loss. The fourth event will steepen the bank

to the point that a slide will occur when the water recedes. A sketch which indicates these losses in bank is presented (Figure C-3). Also developed was a time-rate of bank loss estimate (Figure C-4). After the first slide the process will start over again. The berm made by the slide will be washed away and erosion of virgin material will proceed. The process of bank loss and slide will diminish with time as shown on the time-rate curve. As the channel matures a stable configuration will be reached. This mature shape will sustain inundation, and the flow velocities in the silty soils are reduced to the point where soil does not move.

b. Utilities And Service Connection. At each of the locations where drainage culverts come into the channel the bank loss rate will be twice as great as that shown on Figure C-4. This recession will be over a bank length twice the pipe width. Additionally buildings, roadways and parking lots at the top of bank will accelerate the bank recession rate to 1.5 times that shown on Figure C-4. This accelerated erosion will be over the length of bank adjacent to the facility. The increased rate is due to the increased amount of surface runoff concentrated over the bank.

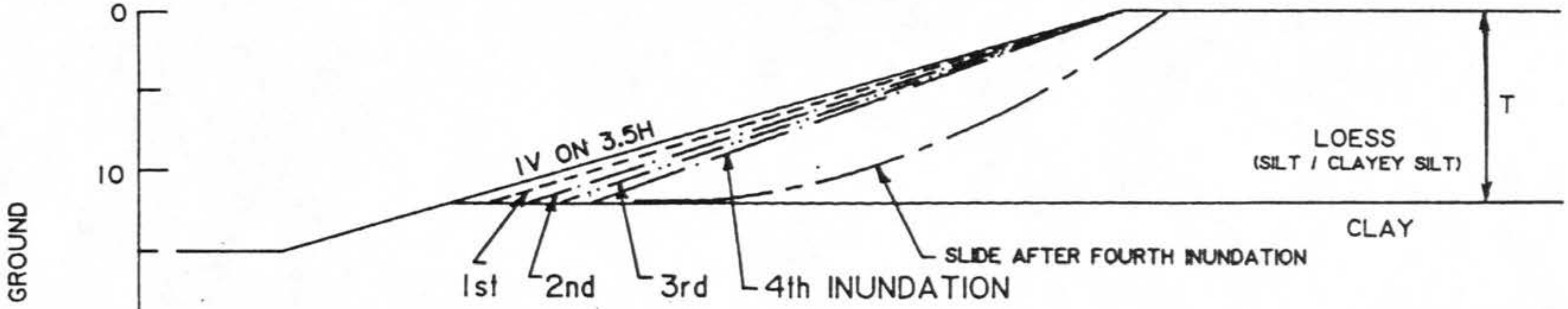
c. Bridges And Structures. It is recommended that at each bridge or structure, as a minimum, concrete slope pavement be used and be applied sufficiently upstream and downstream to prevent erosion at these costly structures. The stream should be sufficiently channelized both upstream and downstream to allow for straight approach of the flows to the structure. All the obstructions such as piles from past construction should be removed to minimize the buildup of debris at these critical locations.

Cross Channel Flow

C.5.6. As the Loess soil is so erodible and most of the streams are in residential areas, flow from the surface is currently allowed or encouraged to flow to the streams at it's closest point. Severe erosion is being observed from this cross flow. In the areas where erosion protection measures are installed, water flowing randomly to the streams should be discouraged by providing a route, such as a small swale, and installing a measure to prevent random inflow, such as a small ridge, less than 1 foot total differential, to channel surface runoff to a central point where special measures may be taken. This swale/ridge should not be immediately at the top of bank as the Loess soil also provides the easiest path to water flow in the vertical, therefore a phenomena of "Juging" vertical erosion will occur. This vertical erosion is a hazard to those using the adjacent land surface and will be detrimental to the project. The swale/ridge may be grassed and used by the land owner as lawn provided the designated purpose is not destroyed.

FUTURE INVESTIGATIONS

C.5.10. Design memoranda will be prepared for each of the separate drainage basins. During the design phase soil borings and laboratory testing will be performed for use in the analysis. Further evaluation of the erodability of the various soil types will be performed allowing the amount of bank protection to be determined.



LIKELY PROGRESS OF BANK RECESSION
UNSURFACED CHANNELS

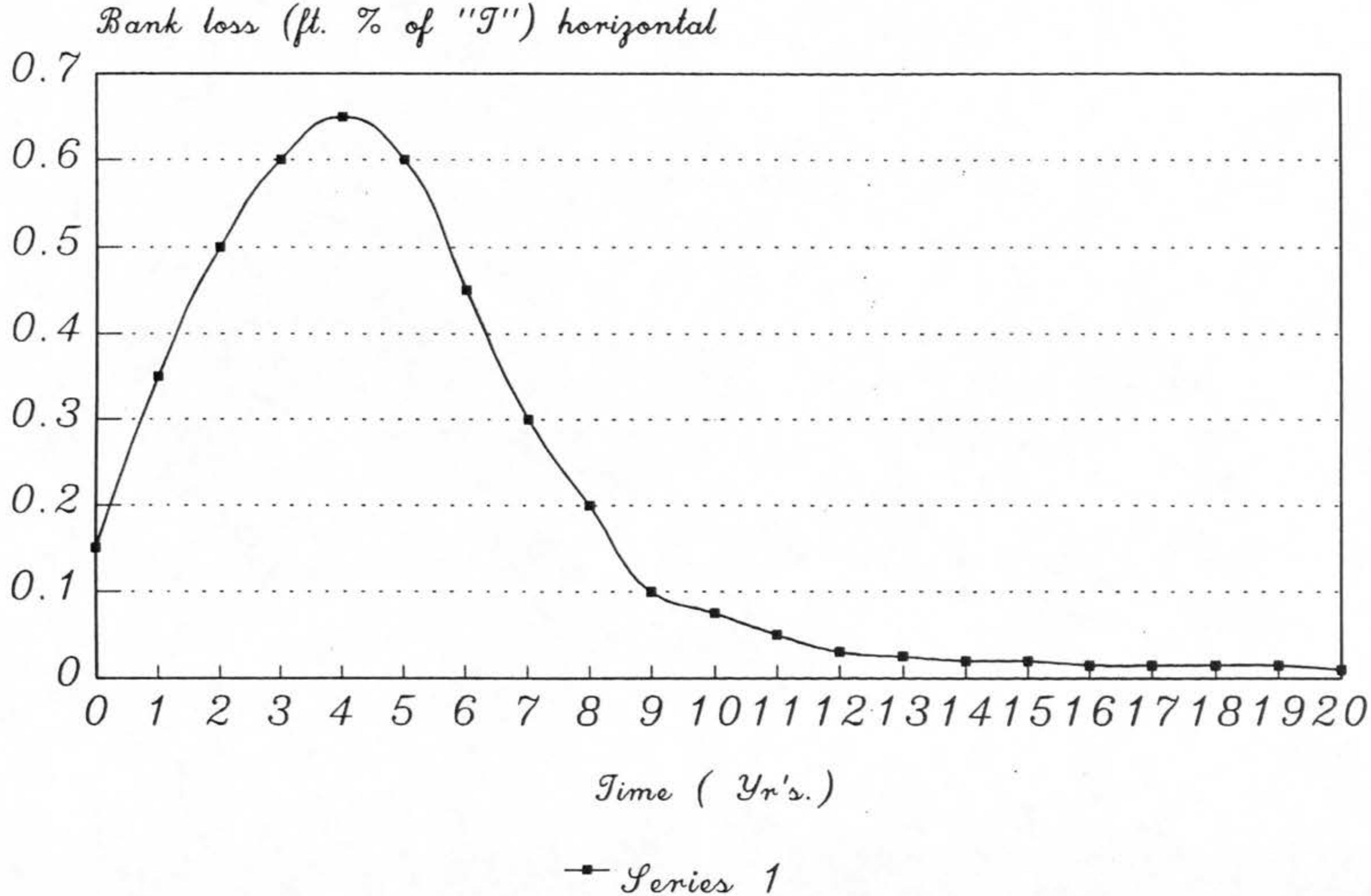
EAST BATON ROUGE

BANK RECESSION

FIGURE C-3

Bank loss

Erosion/Slide



Enter Curve with year and read out bank loss. The loss is Cumlative

East Baton Rouge La.

FIGURE C-4

SECTION 6 – DESIGN

BAYOU FOUNTAIN WATERSHED

C.6.1. The proposed plan for Bayou Fountain consists of clearing and/or widening approximately 11 miles of channel designed to convey a 10 year storm event within stream bank. Improvements are proposed from the bayou's mouth at Bayou Manchac upstream to Ben Hur Road. See Plate C-3.

C.6.2. The proposed channel design calls for only clearing and snagging only for the entire reach with the exception of a section between Siegen and Gardere Lanes. In this reach, a channel widening is proposed and consists of a 50 foot wide bottom with 3:1 bank slopes. It is proposed that improvements be made to one major obstruction, a 60-inch sewer main crossing located at Mile 53.8. The proposed design calls for the construction of a concrete "U-channel" with a 50-foot bottom width.

C.6.3. Construction of the channel will be performed by mechanical dredge (bucket) with approximately 283,000 cubic yards of material to be excavated. The excavated material will be disposed of by truck hauling to the Mississippi River batture. Clearing and snagging work will be performed within the low top of bank contour. Dependent upon the stages at the time of construction, work will be performed by shallow draft floating equipment. It is anticipated that the work will be accomplished using chainsaws and transloaders. Debris removed will be shredded/chipped and made available as mulch/compost or other similar beneficial use.

C.6.4. Structural improvements to this watershed will be required at an existing 60 inch sewer main crossing. A soil founded reinforced concrete U-shaped monolith, used in conjunction with reinforced concrete wing walls, will be utilized in containing the flow in the vicinity of the pipe. Base slabs were assumed to be 3 foot thick, with 2.5 foot thick walls. Reinforced concrete cutoff walls will be located beneath the base slabs to prevent undermining of the foundation materials. A drainage system that would dissipate any excess hydrostatic pressure will be required. The system will consist of weep holes, filter fabric and filter sand placed beneath the U-shape base slab and behind all walls (see Plate C-108.)

JONES CREEK WATERSHED

C.6.5. Structural improvements to this watershed consist of constructing approximately 16 miles of reinforced concrete lining in the existing channel. An improved stable channel section with a 5 foot bottom width and 1V on 3H side slopes will be established through excavation and shaping. The new paving will be placed on this trapezoidal section. The channel bottom will be paved with an 8 inch thick layer of reinforced concrete. The channel side slope paving

thickness will vary. Only 4 inches of reinforced concrete will be placed in the upper two thirds of the channel slope, with 6 inches placed in the lower one third. Reinforced concrete cutoff walls will be located beneath the paving to prevent undermining of the foundation materials. A drainage system that would dissipate any excess hydrostatic pressure will be required. The system will consist of weep holes, filter fabric and filter sand placed beneath both the six inch side slope and 8 inch bottom paving. A sloped reinforced concrete lined pavement will be constructed on each side of the finished top of bank to control bank erosion (see Plates C-6 and C-107).

Proposed minimal clearing and snagging of Jones Creek begins from its mouth upstream to Jones Creek Road. Minimal clearing and snagging will be performed by shallow draft floating equipment within the low top of bank contour. It is anticipated that the work will be accomplished using chain saws and transloaders.

WARD CREEK WATERSHED

C.6.6. The proposed plan for Ward Creek consists of clearing and/or concrete lining approximately 14 miles of channel designed to convey a 25 year storm event within stream bank. Minimal clearing and snagging of the main stem of Ward Creek is proposed from its mouth upstream to its termination just above Corporate Blvd, not including the newly enlarged and relocated section between Pecue and Siegen Lanes. Also included are proposed improvements to the bayou's two main tributaries. Proposed minimal clearing and snagging of Dawson Creek begins from its mouth upstream to its confluence with Bayou Duplantier just above Kenilworth Blvd. Concrete lining of North Branch of Ward Creek is proposed from immediately downstream of I-10 to immediately downstream of I-12 with a design channel section consisting of a 32 foot bottom and 3:1 side slopes.

C.6.7. Minimal clearing and snagging work will be performed within the low top of bank contour. Dependent upon the stages at the time of construction, work will be performed by shallow draft floating equipment. It is anticipated that the work will be accomplished using chainsaws and transloaders. Debris removed will be shredded/chipped and made available as mulch/compost or other similar beneficial use.

C.6.8. Structural improvements to this watershed consist of constructing approximately 5600 linear feet of new reinforced concrete lining in the existing channel reach from I-10 to I-12 as addressed above. An improved stable channel section with a 32 foot bottom width and 1V on 3H side slopes will be established through excavating and shaping. The new paving will be placed on this trapezoidal section. An existing paved section in this reach, which is approximately 1,250 feet long with established side slopes of 2:1 shall remain. The new concrete section with the 3:1 side slopes will be tied into this existing section. The channel bottom will be paved with an 8 inch thick layer of

reinforced concrete. The channel side slope paving thickness will vary. Only 4 inches of reinforced concrete will be placed in the upper two thirds of the channel slope, with 6 inches placed in the lower one third. Reinforced concrete cutoff walls will be located beneath the paving to prevent undermining of the foundation materials. A drainage system that would dissipate any excess hydrostatic pressure will be required. The system will consist of weep holes, filter fabric and filter sand placed beneath both the six inch side slope and 8 inch bottom paving. A sloped reinforced concrete pavement will be constructed on each side of the finished top of bank to control bank erosion (see Plates C-4 and C-107).

BEAVER BAYOU WATERSHED

C.6.9. The proposed plan for Beaver Bayou consists of widening approximately 8 miles of channel designed to convey a 25 year storm event within steam bank. Improvements on the main stem of Beaver Bayou are proposed from Frenchtown Road, where recent improvements are in place from this point to the mouth of the bayou at the Comite River, upstream to Hubbs Road. See Plate C-7.

C.6.10. The proposed channel design is earthen with 3.5:1 bank slopes. In order to control erosion the entire channel section will be protected with a geosynthetic mat. Design bottom widths vary for each reach (See Plate C-106). Concrete lining of the channel section is proposed for a small stretch of "Lateral Tributary" between Hooper and Devall Roads. Construction of the channel will be performed by mechanical dredge (bucket) with approximately 695,000 cubic yards of material to be excavated. The excavated material will be disposed of by truck hauling to the East Baton Rouge Parish Recycling Center.

BLACKWATER BAYOU WATERSHED

C.6.11. The proposed plan for Blackwater Bayou consists of widening approximately 12 miles of channel designed to convey a 10 year storm event within stream bank. Improvements on the main stem of Blackwater Bayou are proposed from the mouth at the Comite River upstream to Greenwell Springs Road. Also included is improvement to one of the bayou's main tributaries. Proposed widening of "Tributary No.1" begins from its confluence with Blackwater Bayou upstream to McCullough Road. See Plate C-7.

C.6.12. The proposed channel design is earthen with 3.5:1 bank slopes. In order to control erosion the entire channel section will be protected with a geosynthetic mat. Design bottom widths vary for each reach (see Plate C-106). Construction of the channel will be performed by mechanical dredge (bucket) with approximately 517,600 cubic yards of material to be excavated. The excavated material will be disposed of by truck hauling to the East Baton Rouge Parish Recycling Center.

SLOPE PAVING

C.6.13. It should be noted that the trapezoidal concrete lined canals incorporate thicknesses which do not meet the criteria provided in the draft EM 1110-1-XXX (Draft) which was designated as Engineer Circular No. 1110-2-270 Engineering and Design - STRUCTURAL DESIGN OF CONCRETE LINED FLOOD CONTROL CHANNELS. This document was issued for guidance and review from 1 Oct 1991 to 30 Sep 1992. Section 3-4 (a)(2), entitled "Concrete Thickness" states that based on past experience, the minimum thickness of slope paving should be 6 to 8 inches. Our paving incorporates 4 inch thick concrete on the upper two thirds of the bank. This was done in order to cut project cost to a minimum. Based on the data and information available at this stage of study, it is the judgement of the designers that 4 inches is adequate. This design has precedent since local interest agencies have used 4 inch slope paving successfully under similar conditions.

FIELD DATA COLLECTION

C.6.14. During the preparation of the DMs, additional surveys and soil borings will be obtained and more detailed design analyses will be conducted. As a result, channel design features of the feasibility study's recommended plan based on 1985 field data may be modified. the additional surveys will tie property lines along the channel alignment to the established baseline. Based on the additional surveys, field reconnaissance, and aerial photographs existing right-of-way interests will be determined during preparation of the DM.

SECTION 7 - RELOCATIONS

GENERAL

C.7.1. Data was gathered on locations of roads, railroads and utilities by searching permits, viewing oil and gas maps and quadrangles and visiting sites. Preliminary relocation plans were developed in-house, without owner's review of these plans.

AUTHORITY FOR ACCOMPLISHING RELOCATIONS

C.7.2. The local sponsor has the responsibility for effecting the facility relocations. The local sponsor will be advised of the affected facilities, their disposition and the schedule of relocation that each owner will accommodate. All relocations can apparently be accomplished within existing right-of-way. Where exceptions exist, only minor additional costs are expected.

AFFECTED FACILITIES

C.7.3. The following describes the affected facilities for each of the four watersheds. A tabulation of all facilities considered on each watershed is contained on Tables C.7.1, C.7.2 and C.7.3. See Plate C-109 for locations of all affected facilities.

Beaver Bayou

C.7.4. Roads.

(a) BB-19. Louisiana Department of Transportation and Development (DOTD) - DOTD owns the LA Hwy #37 Bridge at Greenwell Springs Road. A new 135' long 2-lane, Class 4 Road bridge, to accommodate the 50' bottom width, will be constructed. This bridge will replace the existing 45' long 2-lane, Class 4 Road bridge.

(b) BB-10. DOTD owns the 3-10'x10' LA Hwy #408 culverts at Hooper Road. In order to accommodate the new bottom width a new 135' long bridge will be constructed.

(c) BB-14. East Baton Rouge Parish owns the 3-10'x10' culverts at Wax Road. In order to accommodate the new 50' bottom width, a new 127' long bridge will be constructed.

C.7.5. Railroads. No railroads will be affected in this area.

C.7.6. Utilities.

(a) BB-9. One 3" steel gas pipeline downstream of Denham Road Bridge.

(b) BB-12. One 4" steel gas pipeline near La. Hwy #408 culverts.

(c) BB-13. One 5" steel water line near La. Hwy #408 culverts.

(d) BB-16. One 4" steel gas pipeline near Wax Road culverts.

(e) BB-17. One 6" steel gas pipeline near Wax Road culverts.

(f) BB-18. One 8" steel gas pipeline near Wax Road culverts.

(g) BB-21. One 5" steel water line near La. Hwy #37 bridge.

(h) BB-22. One 4" steel gas pipeline near La. Hwy #37 bridge.

Blackwater Bayou

C.7.7. <u>Roads.</u>

(a) BW-2. East Baton Rouge Parish owns the present 96' long McCullough Road Bridge. A new 2-lane, Class 6 Road bridge, to accommodate the new bottom width, will be constructed.

(b) BW-3. East Baton Rouge Parish owns the present medium duty Blackwater Road Bridge. A new 90' long bridge, to accommodate the new bottom width, will be constructed.

(c) BW-4. East Baton Rouge Parish owns the Dyer Road Bridge. A new 2-lane, Class 4 Road bridge, to accommodate the new bottom width, will be constructed.

(d) BW-5. East Baton Rouge Parish owns the present light duty Carey Road Bridge. A new 2-lane, Class 4 Road bridge, to accommodate the bottom width, will be constructed.

(e) BW-6. East Baton Rouge Parish owns the present medium duty, 2-lane, Class 4 Blackwater Road Bridge. A new bridge, to accommodate the new bottom width, will be constructed.

(f) BW-10. East Baton Rouge Parish owns the present light duty Crumholt Road Bridge. A new 2-lane, Class 6 Road bridge, to accommodate the new bottom width, will be constructed.

(g) BW1-3. East Baton Rouge Parish owns the Core Lane Bridge. A new 2-lane, Class 6 Road bridge, to accommodate the new bottom width, will be constructed.

C.7.8. <u>Railroads.</u> No railroads will be affected in this area.

C.7.9. <u>Utilities.</u>

(a) BW-8. One 12" steel pipeline near Hwy #408 bridge.

(b) BW-8A. One 18" steel pipeline near Hwy. #408 bridge.

(c) BW-9. One Texaco 16" steel pipeline near Crumholt Road Bridge.

(d) BW1-6. One Texaco 16" steel pipeline near Gurney Road Bridge.

Bayou Fountain

C.7.10. <u>Roads.</u> No roads will be affected in this area.

C.7.11. <u>Railroads.</u> No railroads will be affected in this area.

C.7.12. <u>Utilities.</u>

(a) BF-2. One 4" steel petroleum products pipeline approximately 500' west of Siegen Lane.

Jones Creek

C.7.13. No relocation items have been identified for Jones Creek.

Ward Creek

C.7.14. No relocation items have been identified for Ward Creek.

PROCEDURE FOR ACCOMPLISHING RELOCATIONS

C.7.15. Each affected facility owner will provide a relocation plan and schedule which will accommodate the project. The local sponsor will be given these plans and they will effect the facility relocations. If necessary, the affected owners will acquire any relocations right-of-way.

TABLE C.7.1
BEAVER BAYOU
FACILITY LISTING

ITEM NO.	DESCRIPTION	APPROX AMOUNT (Linear Ft.)
BB-1	Hubbs Road Bridge - 2 Lane Class 4 Road (Med Duty)	NOT AFFECTED
BB-2	10" Sewer Line (Cast Iron) near the Hubbs Road Bridge	NOT AFFECTED
BB-3	8" Water Line (Cast Iron) near the Hubbs Road Bridge	NOT AFFECTED
BB-4	Buried Telephone Cable- near the Hubbs Road Bridge	NOT AFFECTED
BB-5	Pinewood Road Bridge - 2 Lane Class 4 Road (Med Duty)	NOT AFFECTED
BB-6	3" Gas Pipeline (Steel) at the Pinewood Road Bridge	NOT AFFECTED
BB-7	Power & Telephone Overhead Lines near Denham Road Bridge	NOT AFFECTED
BB-8	Denham Road Bridge - 2 Lane Class 4 Road (Med Duty)	NOT AFFECTED
BB-9	3" Gas Pipeline (Steel) downstream of Denham Road Bridge	140'
BB-10	LA Hwy #408 Culverts (Hooper Road) 2 Lane, Class 4 Road (Med Duty)	50'
BB-11	Power & Telephone Overhead Lines near LA Hwy #408 culverts	NOT AFFECTED
BB-12	4" Gas Pipeline (Steel) near LA Hwy #408 culverts	160'
BB-13	5" Water Line (Steel) near LA Hwy #408 culverts	160'
BB-14	Wax Road Culverts - 2 Lane, Class 4 Road (Med Duty)	160'
BB-15	Power & Telephone Overhead Lines near Wax Road Culverts	NOT AFFECTED
BB-16	4" Gas Pipeline (Steel) near Wax Road Culverts	150'
BB-17	6" Gas Pipeline (Steel) near Wax Road Culverts	150'
BB-18	8" Water Line (Steel) near Wax Road Culverts	150'
BB-19	LA Hwy #37 Bridge (Greenwell Springs Road) 2 Lane, Class 4 Road (Med Duty)	135'

TABLE C.7.1 (continued)

ITEM NO.	DESCRIPTION	APPROX AMOUNT (Linear Ft.)
BB-20	Power & Telephone Overhead Lines near LA Hwy #37 Bridge	NOT AFFECTED
BB-21	5" Water Line (Steel) near LA Hwy #37 Bridge	185'
BB-22	4" Gas Pipeline (Steel) near LA Hwy #37 Bridge	185'
BB-23	Frenchtown Road Bridge - 2 Lane Class 4 Road (Med Duty)	NOT AFFECTED
BB-24	Power & Telephone Overhead near Frenchtown Road Bridge	NOT AFFECTED
BB-25	2" Gas Pipeline (Steel) near Frenchtown Road Bridge	NOT AFFECTED
BB-26	4" Gas Pipeline (Steel) near Frenchtown Road Bridge	NOT AFFECTED
BB-27	8" Water Line (Steel) near Frenchtown Road Bridge	NOT AFFECTED

TABLE C.7.2
BLACKWATER BAYOU
FACILITY LISTING

ITEM NO.	DESCRIPTION	APPROX AMOUNT (Linear Ft.)
BW-1	Hwy #64 Culverts - 2 Lane Class 4 Road (Med Duty)	NOT AFFECTED
BW-2	McCullough Road Bridge 2 Lane, Class 6 Road (Med Duty)	96'
BW-3	Blackwater Road Bridge (Med Duty)	90'
BW-4	Dyer Road Bridge - 2 Lane, Class 4 Road (Med Duty)	96'
BW-5	Carey Road Bridge - 2 Lane, Class 6 Road (Light Duty)	104'
BW-6	Blackwater Road Bridge - 2 Lane, Class 4 Road (Med Duty)	120'
BW-7	Hwy #408 Bridge - 2 Lane, Class 4 Road (Med Duty)	NOT AFFECTED
BW-8	12" Pipeline (Steel) near Hwy #408 Bridge	55'
BW-8A	18" Pipeline (Steel) near Hwy #408 Bridge	55'
BW-9	16" Pipeline (Steel) near Crumholt Road Bridge	85'
BW-10	Crumholt Road Bridge - 2 Lane Class 6 Road (Light Duty)	114'
BW1-1	McCullough Road Bridge - 2 Lane Class 6 Road (Light Duty)	NOT AFFECTED
BW1-2	Unnamed Road - 2 Lane, Class 6 Road (Light Duty)	NOT AFFECTED
BW1-3	Core Lane Bridge - 2 Lane, Class 6 Road (Light Duty)	86'
BW1-4	Gurney Road Bridge - 2 Lane, Class 6 Road (Light Duty)	NOT AFFECTED
BW1-5	Overhead Powerline near Gurney Road Bridge	NOT AFFECTED
BW1-6	16" Pipeline (Steel) near Gurney Road Bridge	109'

TABLE C.7.3
BAYOU FOUNTAIN
FACILITY LISTING

ITEM NO.	DESCRIPTION	APPROX AMOUNT (Linear Ft.)
BF-2	4" Petroleum Product Pipeline (Steel) near East Boyd Road	176'

SECTION 8 – COST ESTIMATES

BASIS OF COST ESTIMATE

C.8.1. The cost estimate was prepared utilizing M-CACES. Since M-CACES is very limited in addressing construction narratives (E.g. description of work, production rates, material costs/suppliers, etc.) an additional cost estimate using computer software developed within NOD was performed to address specific construction procedures for the various line items in the estimate.

C.8.2. The estimated costs were based upon an analysis of each line item listing quantity, production rate, and time together with equipment, labor, and material costs. Such costs were based on evaluating historical data associated with similar flood control projects recently bid within the New Orleans District.

C.8.3. The estimate was prepared based upon two procedures. On items where details and quantities were available, the estimated costs were prepared analyzing the method of construction for that item and listing the quantity, time and production rate, equipment, labor and material costs in the worksheets. In items where details were limited or unavailable, the estimated costs were based upon the construction work on similar projects within the New Orleans District and referenced, and indexed to current price levels (evaluated as per the ENR index and the Civil Works Construction Cost index).

C.8.4. This project presents no unusual features of work as excavating channels is prevalent and constructing slope protection is common throughout the New Orleans District. It was assumed that sumps and pumps will be used for dewatering the major portion of the construction.

C.8.5. Since the project is located in the metropolitan Baton Rouge area, accessibility within the proximity of each bayou presents no problem. Logistically, the project can be accessed by land from several major highways and interstates.

CONTINGENCIES

C.8.6. In obtaining contingencies, the cost estimate was subjected to a risk analysis using a Range Estimating Computer software program. The procedure varies both quantity and costs. Design engineers and cost engineers contributed to the input of the program. A contingency of 25% was utilized for Jones Creek and Ward Creek, while a contingency percentage of 20% was used for the remaining watersheds.

a. The design uncertainties for the risk analysis associated with these contingency values consisted of the following several conditions which apply to each watershed:

1) No recent survey data. Design (particularly channel geometry) was based upon 1985-86 survey data.

2) Flow capacity requirements obtained from '70's - '80's data. The flow capacity requirements necessary for hydraulic design were obtained from flood insurance data.

3) Limited soil borings. The foundation analysis, including stability analysis, was predicated on an evaluation of limited soil boring data.

4) Unsuitable Loess material. It is assumed that Loess exists in the reaches above Bayou Fountain.

b. Conditions which specifically affect Jones Creek.

1) Cross-sections were taken at bridge locations. While These were deemed representative of channel(s) to be excavated when they were taken (1985-1986), current field reports suggest otherwise. Reports indicate that erosive action has eliminated a portion of anticipated right-of-way required for hauling access. The item Degrading, Hauling, Shaping accounts for the additional work necessary to provide haul access and concrete delivery.

2) Precipitation data shows that the creek will experience many rainfall events throughout the year. Major rainfall events may remove any backfill material which is not protected by concrete pavement.

3) Access by hauling equipment as well as concrete trucks is based on entering and exiting current bridge sites. A substantial number of bridge sites do not offer ready access. Problems at bridge sites include overhead powerlines, underground pipelines, and residential housing.

4) Since the concrete pavement for Jones Creek will be constructed in the dry, we assumed the water table is below the bottom slab elevation.

c. Conditions which specifically affect Ward Creek, North Branch Tributary

1) Cross-sections were taken at bridge locations. While these were deemed representative of the channel(s) to be excavated when they were taken (1985-1986), current field reports suggest otherwise. Reports indicate that erosive action has eliminated a portion of anticipated right-of-way required for hauling access. An additional item (construction access), is incorporated to account for the additional work necessary to provide access and concrete delivery.

2) Precipitation data shows that the creek will experience many rainfall events throughout the year. Major rainfall events may remove portions of the haul road and disrupt operations.

3) Access by hauling equipment as well as concrete trucks is based on entering and exiting current bridge sites. There is a substantial distance between bridge sites. Intermediate access will be investigated during the next design phase.

4) Since the concrete pavement for Ward Creek will be constructed in the dry, we assumed the water table is below the bottom slab elevation.

C.8.7. Contingencies for Engineering and Design are based on uncertainties involved in the preparation of DMs, P&S and in engineering during construction. These include cost of field data collection; unanticipated design problems; change in design based on the review of the report, due to information from surveys and soil borings and changes in design criteria; and changes in overhead rates. Based on the fact that limited surveys and boring data were available for the feasibility study and considering the scope of the project, a contingency of 20% was used for all E&D estimates.

C.8.8. The 20% contingencies for Construction Management are based on using a historical average of time growth for similar type contracts in the area. The 20% time growth includes additional duration for unusually severe weather and unknown changes to the contracts.

ANNEX 1

SAMPLING LOCATIONS AND DESCRIPTIONS:

EBRP- 1: Bayou Fountain @ Gardere Ln.

EBRP- 2: Dawson Creek @ Blue Bonnet Rd.

EBRP- 3: Ward Creek @ Blue Bonnet Rd.

EBRP- 4: Weiner Creek @ Sherwood Forest Blvd.

EBRP- 5: Jones Creek @ Woodlawn Ridge Blvd.

EBRP- 6: North Branch Ward Creek @ Old Hammond Hwy.

EBRP- 7: Jones Creek Trib. @ Gerald Dr.

EBRP- 8: Blackwater Bayou @ Hooper Rd.

EBRP- 9: Blackwater Bayou @ Carey Rd. ($^1/_2$ mile downstream of Blackwater Bayou Trib. # 2)

EBRP-10: Blackwater Bayou Trib. # 1 @ Gurney Rd.

EBRP-11: Beaver Bayou Trib. @ Devall Rd.

EBRP-12: Beaver Bayou Lateral @ Hooper Rd.

EBRP-13: Beaver Bayou @ Greenwell Springs Rd.

EBRP-14: Lively Bayou @ South Flannery Rd.

EBRP-15: Lively Bayou Trib. @ Goodwood Blvd.

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	Date Received	Date Completed	Time Taken	TOTAL Reported in PPM. TKN	NH3 -N	Total P
EBRP-1 TOTAL	26 OCT 89	23 FEB 89	1100	3.01	-	1.67
EBRP-2 TOTAL	26 OCT 89	23 FEB 89	1010	2.93	-	0.78
EBRP-3 TOTAL	26 OCT 89	23 FEB 89	0926	1.45	-	0.31
EBRP-4 TOTAL	26 OCT 89	23 FEB 89	1200	0.69	-	0.36
EBRP-5 TOTAL	26 OCT 89	23 FEB 89	1245	2.35	-	1.54
EBRP-6 TOTAL	26 OCT 89	23 FEB 89	1330	0.74	-	0.14
EBRP-7 TOTAL	26 OCT 89	23 FEB 89	1410	1.07	-	0.63
EBRP-8 TOTAL	26 OCT 89	23 FEB 89	1100	2.86	-	1.86
EBRP-9 TOTAL	26 OCT 89	23 FEB 89	0950	1.38	-	0.35
EBRP-10 TOTAL	26 OCT 89	23 FEB 89	1025	4.50	-	1.63
EBRP-11 TOTAL	26 OCT 89	23 FEB 89	1145	4.18	-	1.82
EBRP-12 TOTAL	26 OCT 89	23 FEB 89	1205	4.06	-	5.55
EBRP-13 TOTAL	26 OCT 89	23 FEB 89	1235	1.61	-	1.49
EBRP-14 TOTAL	26 OCT 89	23 FEB 89	1330	4.18	-	4.07
EBRP-15 TOTAL	26 OCT 89	23 FEB 89	1305	1.56	-	0.10
Quality Control						
Certified Value				4.2		8.8
Observed Value				4.2		8.6

NOTE:
All values reported in PPM unless ststed otherwise.
- = No values available.
C.O.D. = Chemical Oxygen Demand
D.O. = Dissolved Oxygen
Turbidities reported in NTU.
Fecal Coliforms reported in counts/100ml.
B.D.L. = Below Detection Limits, .010 PPB.
Pesticide Scan includes:
ALDRIN BHC CHLORDANE DDD DDE DDT
DIELDRIN ENDRIN ENDOSULFAN HEPTACHLOR
HEPTACHLOR-EPOXIDE LINDANE METHOXYCHLOR
MIREX PCB'S

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	TOTAL Reported in PPM. NO3-N	NO2-N	pH	C.O.D.	Oil & Grease	Fecal Coliform
EBRP-1 TOTAL	-	-	7.5	28	<5	700
EBRP-2 TOTAL	-	-	7.3	53	<5	24,000
EBRP-3 TOTAL	-	-	7.6	31	<5	7040
EBRP-4 TOTAL	-	-	8.3	18	<5	4660
EBRP-5 TOTAL	-	-	8.6	36	<5	980
EBRP-6 TOTAL	-	-	7.8	25	<5	400
EBRP-7 TOTAL	-	-	7.9	35	<5	260
EBRP-8 TOTAL	-	-	7.5	48	<5	7440
EBRP-9 TOTAL	-	-	6.6	40	<5	290
EBRP-10 TOTAL	-	-	7.1	52	<5	1400
EBRP-11 TOTAL	-	-	7.3	42	<5	1520
EBRP-12 TOTAL	-	-	7.6	30	<5	3600
EBRP-13 TOTAL	-	-	6.8	30	<5	540
EBRP-14 TOTAL	-	-	7.8	30	<5	5780
EBRP-15 TOTAL	-	-	7.3	25	<5	126

Quality Control	C.O.D.
Certified Value	60
Observed Value	55

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	Chlor. Pesticides	Field D.O.	Susp. Solids	Volatile S.S.	Turbidity
EBRP-1 TOTAL	B.D.L.	2.6	18	4	15
EBRP-2 TOTAL	B.D.L.	0.9	23	6	29
EBRP-3 TOTAL	B.D.L.	3.6	20	3	18
EBRP-4 TOTAL	B.D.L.	7.4	45	7	28
EBRP-5 TOTAL	B.D.L.	12.3	13	4	6
EBRP-6 TOTAL	B.D.L.	3.7	14	3	15
EBRP-7 TOTAL	B.D.L.	3.3	15	4	13
EBRP-8 TOTAL	B.D.L.	8.5	16	5	25
EBRP-9 TOTAL	B.D.L.	3.5	10	2	25
EBRP-10 TOTAL	B.D.L.	2.5	80	17	85
EBRP-11 TOTAL	B.D.L.	2.5	83	10	73
EBRP-12 TOTAL	B.D.L.	3.5	8	2	11
EBRP-13 TOTAL	B.D.L.	4.2	15	6	21
EBRP-14 TOTAL	B.D.L.	3.5	38	5	38
EBRP-15 TOTAL	B.D.L.	4.5	11	3	18

Quality Control
Certified Value

Observed Value

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	Total Solids	Volatile Solids	Temp.
EBRP-1 TOTAL	-	-	17.5
EBRP-2 TOTAL	-	-	17
EBRP-3 TOTAL	-	-	17
EBRP-4 TOTAL	-	-	19
EBRP-5 TOTAL	-	-	20
EBRP-6 TOTAL	-	-	21.5
EBRP-7 TOTAL	-	-	18
EBRP-8 TOTAL	-	-	14
EBRP-9 TOTAL	-	-	12.5
EBRP-10 TOTAL	-	-	14
EBRP-11 TOTAL	-	-	15
EBRP-12 TOTAL	-	-	18.5
EBRP-13 TOTAL	-	-	16
EBRP-14 TOTAL	-	-	18
EBRP-15 TOTAL	-	-	19

Quality Control
Certified Value

Observed Value

ast Baton Rouge Parish

/pe	Date Received	Date Completed	TOTALS Reported in PPB. As	Ca	Cd	TOTAL Cr
	26 OCT 89	23 FEB 90	8.7	29	<0.1	<1.0
	26 OCT 89	23 FEB 90	3.3	16	4.2	<1.0
	26 OCT 89	23 FEB 90	2.8	33	<0.1	<1.0
	26 OCT 89	23 FEB 90	2.0	10	<0.1	<1.0
	26 OCT 89	23 FEB 90	2.8	23	<0.1	<1.0
	26 OCT 89	23 FEB 90	2.7	27	<0.1	<1.0
	26 OCT 89	23 FEB 90	3.5	34	<0.1	<1.0
	26 OCT 89	23 FEB 90	2.9	12	<0.1	<1.0
	26 OCT 89	23 FEB 90	1.7	6	<0.1	<1.0
	26 OCT 89	23 FEB 90	3.8	16	<0.1	<1.0
	26 OCT 89	23 FEB 90	2.9	3	<0.1	<1.0
	26 OCT 89	23 FEB 90	1.1	9	<0.1	<1.0
	26 OCT 89	23 FEB 90	2.6	6	1.0	<1.0
	26 OCT 89	23 FEB 90	2.0	10	0.3	<1.0
	26 OCT 89	23 FEB 90	2.1	28	<0.1	<1.0
			44	–	–	162
				–		
			43		–	161

ed in PPB (sediment in ug/kg dry).

METALS REPORT East Baton Rouge Parish

Sample Name & Type Reported in PPB.	Cu	Hg	Mg	Ni	Pb	Zn
			TOTALS Reported in PPB.			
EBRP-1 TOTAL	<1.0	<0.5	8	<1.0	12	43
EBRP-2 TOTAL	4.1	1.4	3	47	16	37
EBRP-3 TOTAL	<1.0	<0.5	6	28	10	33
EBRP-4 TOTAL	20	1.1	<1	119	5.2	76
EBRP-5 TOTAL	<1.0	0.9	5	66	141	11
EBRP-6 TOTAL	<1.0	<0.5	7	86	9.0	26
EBRP-7 TOTAL	<1.0	1.2	8	<1.0	1.1	18
EBRP-8 TOTAL	4.2	0.6	4	<1.0	<1.0	17
EBRP-9 TOTAL	<1.0	<0.5	2	<1.0	<1.0	25
EBRP-10 TOTAL	<1.0	2.2	3	20	24	15
EBRP-11 TOTAL	<1.0	<0.5	<1	<1.0	41	33
EBRP-12 TOTAL	<1.0	0.6	2	<1.0	10	37
EBRP-13 TOTAL	<1.0	<0.5	2	<1.0	158	18
EBRP-14 TOTAL	<1.0	0.8	2	39	9.1	33
EBRP-15 TOTAL	<1.0	0.6	7	<1.0	15	11
Quality Control						
Certified Value	70	6.4	-	74	160	188
Flame Value			-			
Furnace Value	73	6.3	-	84	154	186

Notes:

CV= Cold Vapor

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	Date Received	Date Completed	Time Taken	TOTAL Reported in PPM. TKN	NH3 -N	Total F
EBRP-1 DISSOLVED	26 OCT 89	23 FEB 90	-	2.70	1.65	1.53
EBRP-2 DISSOLVED	26 OCT 89	23 FEB 90	-	1.96	1.21	0.37
EBRP-3 DISSOLVED	26 OCT 89	23 FEB 90	-	1.26	0.54	0.28
EBRP-4 DISSOLVED	26 OCT 89	23 FEB 90	-	0.61	0.28	0.32
EBRP-5 DISSOLVED	26 OCT 89	23 FEB 90	-	1.28	0.49	0.99
EBRP-6 DISSOLVED	26 OCT 89	23 FEB 90	-	0.68	<.01	0.16
EBRP-7 DISSOLVED	26 OCT 89	23 FEB 90	-	0.71	0.04	0.39
EBRP-8 DISSOLVED	26 OCT 89	23 FEB 90	-	1.87	0.74	1.30
EBRP-9 DISSOLVED	26 OCT 89	23 FEB 90	-	0.89	0.14	0.30
EBRP-10 DISSOLVED	26 OCT 89	23 FEB 90	-	2.99	1.78	0.97
EBRP-11 DISSOLVED	26 OCT 89	23 FEB 90	-	3.76	2.55	1.51
EBRP-12 DISSOLVED	26 OCT 89	23 FEB 90	-	3.78	2.23	5.46
EBRP-13 DISSOLVED	26 OCT 89	23 FEB 90	-	0.94	0.03	0.99
EBRP-14 DISSOLVED	26 OCT 89	23 FEB 90	-	2.90	2.31	3.07
EBRP-15 DISSOLVED	26 OCT 89	23 FEB 90	-	1.55	0.02	0.09

Quality Control
Certified Value

Observed Value

NOTE:
All values reported in PPM unless ststed otherwise.
- = No values available.
C.O.D. = Chemical Oxygen Demand
D.O. = Dissolved Oxygen
Turbidities reported in NTU.
Fecal Coliforms reported in counts/100ml.
B.D.L. = Below Detection Limits, .010 PPB.
Pesticide Scan includes:
ALDRIN BHC CHLORDANE DDD DDE DDT
DIELDRIN ENDRIN ENDOSULFAN HEPTACHLOR
HEPTACHLOR-EPOXIDE LINDANE METHOXYCHLOR
MIREX PCB'S

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	TOTAL Reported in PPM. NO3-N	NO2-N	pH	C.O.D.	Oil & Grease	Fecal Coliform
EBRP-1 DISSOLVED	2.10	0.16	-	21	-	-
EBRP-2 DISSOLVED	0.27	0.06	-	35	-	-
EBRP-3 DISSOLVED	0.40	0.02	-	22	-	-
EBRP-4 DISSOLVED	1.08	0.02	-	11	-	-
EBRP-5 DISSOLVED	2.59	0.21	-	22	-	-
EBRP-6 DISSOLVED	0.15	<.01	-	22	-	-
EBRP-7 DISSOLVED	0.61	<.01	-	33	-	-
EBRP-8 DISSOLVED	4.35	0.23	-	45	-	-
EBRP-9 DISSOLVED	1.11	0.02	-	33	-	-
EBRP-10 DISSOLVED	0.45	0.02	-	32	-	-
EBRP-11 DISSOLVED	1.20	0.08	-	32	-	-
EBRP-12 DISSOLVED	4.18	0.35	-	30	-	-
EBRP-13 DISSOLVED	3.06	0.05	-	25	-	-
EBRP-14 DISSOLVED	3.56	0.60	-	30	-	-
EBRP-15 DISSOLVED	0.12	0.04	-	<5	-	-

Quality Control Certified Value	5.3	2.8
Observed Value	5.4	2.4

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	Chlor. Pesticides	Field D.O.	Susp. Solids	Volatile S.S.	Total Solids	Volati Solid
EBRP-1 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-2 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-3 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-4 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-5 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-6 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-7 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-8 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-9 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-10 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-11 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-12 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-13 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-14 DISSOLVED	B.D.L.	-	-	-	-	-
EBRP-15 DISSOLVED	B.D.L.	-	-	-	-	-

Quality Control
Certified Value

Observed Value

METALS REPORT East Baton Rouge Parish

Sample Name & Type	Date Received	Date Completed	TOTALS Reported in PPB. As	Ca	Cd	TOTAL Cr
EBRP-1 DISSOLVED	26 OCT 89	23 FEB 90	7.7	27	<0.1	<1.0
EBRP-2 DISSOLVED	26 OCT 89	23 FEB 90	1.9	16	<0.1	<1.0
EBRP-3 DISSOLVED	26 OCT 89	23 FEB 90	2.8	33	<0.1	<1.0
EBRP-4 DISSOLVED	26 OCT 89	23 FEB 90	1.2	10	<0.1	<1.0
EBRP-5 DISSOLVED	26 OCT 89	23 FEB 90	2.8	22	<0.1	<1.0
EBRP-6 DISSOLVED	26 OCT 89	23 FEB 90	2.2	27	<0.1	<1.0
EBRP-7 DISSOLVED	26 OCT 89	23 FEB 90	3.1	34	<0.1	<1.0
EBRP-8 DISSOLVED	26 OCT 89	23 FEB 90	2.9	12	<0.1	<1.0
EBRP-9 DISSOLVED	26 OCT 89	23 FEB 90	1.0	6	<0.1	<1.0
EBRP-10 DISSOLVED	26 OCT 89	23 FEB 90	1.5	10	<0.1	<1.0
EBRP-11 DISSOLVED	26 OCT 89	23 FEB 90	1.9	3	<0.1	<1.0
EBRP-12 DISSOLVED	26 OCT 89	23 FEB 90	1.1	6	<0.1	<1.0
EBRP-13 DISSOLVED	26 OCT 89	23 FEB 90	2.0	7	<0.1	<1.0
EBRP-14 DISSOLVED	26 OCT 89	23 FEB 90	1.7	7	<0.1	<1.0
EBRP-15 DISSOLVED	26 OCT 89	23 FEB 90	1.3	29	<0.1	<1.0
Quality Control						
Certified Value			44	–	–	162
Flame Value				–		
Furnace Value			43		–	161

Notes:

CV= Cold Vapor

All values reported in PPB (sediment in ug/kg dry)

METALS REPORT East Baton Rouge Parish

Sample Name & Type	Reported in PPB. Cu	Hg	TOTALS Reported in PPB. Mg	Ni	Pb	Zn
EBRP-1 DISSOLVED	<1.0	<0.5	7	<1.0	<1.0	26
EBRP-2 DISSOLVED	<1.0	1.2	3	15.4	<1.0	24
EBRP-3 DISSOLVED	<1.0	<0.5	6	9.5	1.9	22
EBRP-4 DISSOLVED	<1.0	<0.5	<1	7.1	<1.0	10
EBRP-5 DISSOLVED	<1.0	<0.5	5	63.2	11.7	4
EBRP-6 DISSOLVED	<1.0	<0.5	6	10.9	<1.0	21
EBRP-7 DISSOLVED	<1.0	<0.5	5	<1.0	<1.0	11
EBRP-8 DISSOLVED	<1.0	<0.5	4	<1.0	<1.0	17
EBRP-9 DISSOLVED	<1.0	<0.5	2	<1.0	1.7	12
EBRP-10 DISSOLVED	<1.0	<0.5	3	<1.0	2.4	11
EBRP-11 DISSOLVED	<1.0	<0.5	<1	<1.0	4.3	10
EBRP-12 DISSOLVED	<1.0	<0.5	<1	<1.0	<1.0	16
EBRP-13 DISSOLVED	<1.0	<0.5	2	<1.0	<1.0	8
EBRP-14 DISSOLVED	<1.0	<0.5	2	22.2	<1.0	7
EBRP-15 DISSOLVED	<1.0	<0.5	5	<1.0	<1.0	5
Quality Control						
Certified Value	70	6.4	-	74	160	188
Flame Value			-			
Furnace Value	73	6.3	-	84	154	186

Notes:

CV= Cold Vapor

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	Date Received	Date Completed	Time Taken	TOTAL Reported in PPM. TKN	NH3 -N	Total P
EBRP-1 SEDIMENT	26 OCT 89	23 FEB 90	-	1720	53.1	717
EBRP-2 SEDIMENT	26 OCT 89	23 FEB 90	-	580	64.4	382
EBRP-3 SEDIMENT	26 OCT 89	23 FEB 90	-	828	51.7	687
EBRP-4 SEDIMENT	26 OCT 89	23 FEB 90	-	839	5.55	456
EBRP-5 SEDIMENT	26 OCT 89	23 FEB 90	-	273	1.48	234
EBRP-6 SEDIMENT	26 OCT 89	23 FEB 90	-	164	18.2	510
EBRP-7 SEDIMENT	26 OCT 89	23 FEB 90	-	3220	22.3	693
EBRP-8 SEDIMENT	26 OCT 89	23 FEB 90	-	44	<.10	40
EBRP-9 SEDIMENT	26 OCT 89	23 FEB 90	-	92	<.10	160
EBRP-10 SEDIMENT	26 OCT 89	23 FEB 90	-	1390	7.36	272
EBRP-11 SEDIMENT	26 OCT 89	23 FEB 90	-	446	40.9	200
EBRP-12 SEDIMENT	26 OCT 89	23 FEB 90	-	207	33.0	434
EBRP-13 SEDIMENT	26 OCT 89	23 FEB 90	-	30	<.10	46
EBRP-14 SEDIMENT	26 OCT 89	23 FEB 90	-	749	46.4	773
EBRP-15 SEDIMENT	26 OCT 89	23 FEB 90	-	438	11.2	642

Quality Control
Certified Value

Observed Value

NOTE:
All values reported in PPM unless ststed otherwise.
- = No values available.
Total Solids and Total Volatile Solids are in %.
C.O.D. = Chemical Oxygen Demand
D.O. = Dissolved Oxygen
Turbidities reported in NTU.
Fecal Coliforms reported in counts/100ml.
B.D.L. = Below Detection Limits, .010 PPB.
Pesticide Scan includes:
ALDRIN BHC CHLORDANE DDD DDE DDT
DIELDRIN ENDRIN ENDOSULFAN HEPTACHLOR
HEPTACHLOR-EPOXIDE LINDANE METHOXYCHLOR
MIREX PCB'S

NUTRIENTS & MISCELLANEOUS REPORT – East Baton Rouge Parish

Sample Name & Type	TOTAL Reported in PPM. NO3-N	NO2-N	pH	C.O.D.	Oil & Grease	Fecal Coliform
EBRP-1 SEDIMENT	4.89	<.10	–	83,700	1150	–
EBRP-2 SEDIMENT	2.35	<.10	–	23,300	101	–
EBRP-3 SEDIMENT	3.72	<.10	–	37,400	1080	–
EBRP-4 SEDIMENT	14.4	<.10	–	1820	<5	–
EBRP-5 SEDIMENT	11.1	<.10	–	700	224	–
EBRP-6 SEDIMENT	1.55	<.10	–	9710	1300	–
EBRP-7 SEDIMENT	<.10	<.10	–	68,700	1140	–
EBRP-8 SEDIMENT	10.2	<.10	–	633	<5	–
EBRP-9 SEDIMENT	0.17	<.10	–	2650	<5	–
EBRP-10 SEDIMENT	0.58	<.10	–	2560	<5	–
EBRP-11 SEDIMENT	3.58	<.10	–	17,000	203	–
EBRP-12 SEDIMENT	14.3	<.10	–	11,700	104	–
EBRP-13 SEDIMENT	6.91	<.10	–	841	<5	–
EBRP-14 SEDIMENT	7.25	<.10	–	27,000	533	–
EBRP-15 SEDIMENT	0.17	<.10	–	20,300	833	–

Quality Control
Certified Value

Observed Value

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	Chlor. Pesticides	Field D.O.	Susp. Solids	Volatile S.S.	Total Solids	Volat Soli
EBRP-1 SEDIMENT	B.D.L.	-	-	-	49.90	6.01
EBRP-2 SEDIMENT	B.D.L.	-	-	-	69.07	2.82
EBRP-3 SEDIMENT	B.D.L.	-	-	-	64.59	2.99
EBRP-4 SEDIMENT	B.D.L.	-	-	-	73.13	2.82
EBRP-5 SEDIMENT	B.D.L.	-	-	-	71.49	2.89
EBRP-6 SEDIMENT	B.D.L.	-	-	-	78.03	1.89
EBRP-7 SEDIMENT	B.D.L.	-	-	-	60.60	6.22
EBRP-8 SEDIMENT	B.D.L.	-	-	-	83.16	0.13
EBRP-9 SEDIMENT	B.D.L.	-	-	-	80.25	0.47
EBRP-10 SEDIMENT	B.D.L.	-	-	-	82.69	0.84
EBRP-11 SEDIMENT	B.D.L.	-	-	-	74.03	2.13
EBRP-12 SEDIMENT	B.D.L.	-	-	-	77.37	1.34
EBRP-13 SEDIMENT	B.D.L.	-	-	-	86.43	0.27
EBRP-14 SEDIMENT	B.D.L.	-	-	-	65.68	3.93
EBRP-15 SEDIMENT	ALDRIN 44ppb	-	-	-	73.82	2.79

Quality Control
Certified Value

Observed Value

METALS REPORT - East Baton Rouge Parish

Sample Name & Type	Date Received	Date Completed	TOTALS Reported in PPB. As	Ca	Cd	TOTAl Cr
EBRP-1 SEDIMENT	26 OCT 89	23 FEB 90	5810	2950	64	12,90(
EBRP-2 SEDIMENT	26 OCT 89	23 FEB 90	4010	1260	<10	11,30(
EBRP-3 SEDIMENT	26 OCT 89	23 FEB 90	3790	4910	<10	11,00(
EBRP-4 SEDIMENT	26 OCT 89	23 FEB 90	1190	790	<10	12,40(
EBRP-5 SEDIMENT	26 OCT 89	23 FEB 90	420	476	<10	10,00(
EBRP-6 SEDIMENT	26 OCT 89	23 FEB 90	14,400	1150	154	15,300
EBRP-7 SEDIMENT	26 OCT 89	23 FEB 90	5860	890	17	16,300
EBRP-8 SEDIMENT	26 OCT 89	23 FEB 90	2020	36	<10	3970
EBRP-9 SEDIMENT	26 OCT 89	23 FEB 90	1930	87	<10	1840
EBRP-10 SEDIMENT	26 OCT 89	23 FEB 90	496	48	<10	1030
EBRP-11 SEDIMENT	26 OCT 89	23 FEB 90	3210	54	<10	8590
EBRP-12 SEDIMENT	26 OCT 89	23 FEB 90	1090	52	<10	3350
EBRP-13 SEDIMENT	26 OCT 89	23 FEB 90	764	46	<10	2790
EBRP-14 SEDIMENT	26 OCT 89	23 FEB 90	6820	807	<10	12,100
EBRP-15 SEDIMENT	26 OCT 89	23 FEB 90	11,400	1520	163	11,900
Quality Control						
Certified Value			44	-	-	162
Flame Value				-		
Furnace Value			43		-	161

Notes:

CV= Cold Vapor

ll results reported in PPB (sediments in ug/kg dry).

METALS REPORT - East Baton Rouge Parish

Sample Name & Type Reported in PPB.	Cu	Hg	TOTALS Reported in PPB. Mg	Ni	Pb	Zn
EBRP-1 SEDIMENT	12,100	421	1880	17,500	49,900	82,800
EBRP-2 SEDIMENT	10,300	145	1770	12,000	16,100	57,000
EBRP-3 SEDIMENT	8050	139	2370	11,200	29,700	56,200
EBRP-4 SEDIMENT	7260	123	1970	15,500	4920	32,700
EBRP-5 SEDIMENT	3160	126	1270	11,700	7510	41,300
EBRP-6 SEDIMENT	10,900	96	590	13,000	24,300	80,600
EBRP-7 SEDIMENT	8180	182	842	17,300	47,300	257,000
EBRP-8 SEDIMENT	2020	84	<10	1080	758	3850
EBRP-9 SEDIMENT	212	150	<10	636	2110	5110
EBRP-10 SEDIMENT	24	60	48	883	847	2540
EBRP-11 SEDIMENT	3760	68	230	6500	10,100	21,900
EBRP-12 SEDIMENT	22,300	65	39	583	7120	21,600
EBRP-13 SEDIMENT	1940	78	<10	<10	116	3470
EBRP-14 SEDIMENT	10,700	167	1050	14,000	35,600	85,900
EBRP-15 SEDIMENT	6490	244	880	18,700	26,000	84,800
Quality Control						
Certified Value	70	6.4	-	74	160	188
Flame Value			-			
Furnace Value	73	6.3	-	84	154	186

Notes:

CV= Cold Vapor

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	Date Received	Date Completed	Time Taken	TOTAL TKN	Reported in PPM. NH3 -N	Total
EBRP-1-ELUTRIATE	26 OCT 89	23 FEB 90	-	6.38	5.16	0.12
EBRP-2 ELUTRIATE	26 OCT 89	23 FEB 90	-	4.56	3.14	0.12
EBRP-3 ELUTRIATE	26 OCT 89	23 FEB 90	-	5.36	4.41	0.11
EBRP-4 ELUTRIATE	26 OCT 89	23 FEB 90	-	0.52	<.01	0.25
EBRP-5 ELUTRIATE	26 OCT 89	23 FEB 90	-	0.69	<.01	0.46
EBRP-6 ELUTRIATE	26 OCT 89	23 FEB 90	-	1.56	0.81	0.10
EBRP-7 ELUTRIATE	26 OCT 89	23 FEB 90	-	1.79	0.80	0.08
EBRP-8 ELUTRIATE	26 OCT 89	23 FEB 90	-	1.48	0.34	1.34
EBRP-9 ELUTRIATE	26 OCT 89	23 FEB 90	-	1.00	0.11	0.16
EBRP-10 ELUTRIATE	26 OCT 89	23 FEB 90	-	2.22	1.35	0.09
EBRP-11 ELUTRIATE	26 OCT 89	23 FEB 90	-	2.93	2.35	0.06
EBRP-12 ELUTRIATE	26 OCT 89	23 FEB 90	-	8.08	6.53	0.27
EBRP-13 ELUTRIATE	26 OCT 89	23 FEB 90	-	0.98	<.01	0.61
EBRP-14 ELUTRIATE	26 OCT 89	23 FEB 90	-	4.48	3.14	0.32
EBRP-15 ELUTRIATE	26 OCT 89	23 FEB 90	-	2.02	0.74	0.07

Quality Control
Certified Value

Observed Value

NOTE:
All values reported in PPM unless ststed otherwise.
- = No values available.
C.O.D. = Chemical Oxygen Demand
D.O. = Dissolved Oxygen
Turbidities reported in NTU.
Fecal Coliforms reported in counts/100ml.
B.D.L. = Below Detection Limits, .010 PPB.
Pesticide Scan includes:
ALDRIN BHC CHLORDANE DDD DDE DDT
DIELDRIN ENDRIN ENDOSULFAN HEPTACHLOR
HEPTACHLOR-EPOXIDE LINDANE METHOXYCHLOR
MIREX PCB'S

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	TOTAL Reported in PPM. NO3-N	NO2-N	pH	C.O.D.	Oil & Grease	Fecal Coliform
EBRP-1-ELUTRIATE	1.21	0.06	-	23	-	-
EBRP-2 ELUTRIATE	0.04	0.05	-	35	-	-
EBRP-3 ELUTRIATE	0.76	0.03	-	23	-	-
EBRP-4 ELUTRIATE	1.75	0.02	-	10	-	-
EBRP-5 ELUTRIATE	3.28	0.15	-	26	-	-
EBRP-6 ELUTRIATE	0.65	0.02	-	32	-	-
EBRP-7 ELUTRIATE	0.30	0.01	-	30	-	-
EBRP-8 ELUTRIATE	3.48	0.24	-	25	-	-
EBRP-9 ELUTRIATE	0.60	0.01	-	47	-	-
EBRP-10 ELUTRIATE	0.25	0.04	-	33	-	-
EBRP-11 ELUTRIATE	1.28	<.01	-	30	-	-
EBRP-12 ELUTRIATE	3.87	0.46	-	39	-	-
EBRP-13 ELUTRIATE	2.75	0.01	-	38	-	-
EBRP-14 ELUTRIATE	2.06	0.47	-	30	-	-
EBRP-15 ELUTRIATE	0.39	0.03	-	22	-	-

Quality Control
Certified Value

Observed Value

NUTRIENTS & MISCELLANEOUS REPORT - East Baton Rouge Parish

Sample Name & Type	Chlor. Pesticides	Field D.O.	Susp. Solids	Volatile S.S.	Total Solids	Volat Soli
EBRP-1-ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-2 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-3 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-4 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-5 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-6 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-7 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-8 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-9 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-10 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-11 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-12 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-13 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-14 ELUTRIATE	B.D.L.	-	-	-	-	-
EBRP-15 ELUTRIATE	B.D.L.	-	-	-	-	-

Quality Control
Certified Value

Observed Value

METALS REPORT East Baton Rouge Parish

Sample Name & Type	Date Received	Date Completed	TOTALS Reported in PPB. As	Ca	Cd	TOTALS Cr
EBRP-1 ELUTRIATE	26 OCT 89	23 FEB 90	2.5	36	<0.1	<1.0
EBRP-2 ELUTRIATE	26 OCT 89	23 FEB 90	2.0	29	<0.1	<1.0
EBRP-3 ELUTRIATE	26 OCT 89	23 FEB 90	2.6	44	<0.1	<1.0
EBRP-4 ELUTRIATE	26 OCT 89	23 FEB 90	1.1	16	<0.1	<1.0
EBRP-5 ELUTRIATE	26 OCT 89	23 FEB 90	<1.0	25	<0.1	<1.0
EBRP-6 ELUTRIATE	26 OCT 89	23 FEB 90	<1.0	39	<0.1	<1.0
EBRP-7 ELUTRIATE	26 OCT 89	23 FEB 90	<1.0	39	<0.1	<1.0
EBRP-8 ELUTRIATE	26 OCT 89	23 FEB 90	3.9	11	<0.1	<1.0
EBRP-9 ELUTRIATE	26 OCT 89	23 FEB 90	<1.0	7	<0.1	<1.0
EBRP-10 ELUTRIATE	26 OCT 89	23 FEB 90	<1.0	12	<0.1	<1.0
EBRP-11 ELUTRIATE	26 OCT 89	23 FEB 90	1.6	3	<0.1	<1.0
EBRP-12 ELUTRIATE	26 OCT 89	23 FEB 90	2.7	5	<0.1	<1.0
EBRP-13 ELUTRIATE	26 OCT 89	23 FEB 90	1.0	7	<0.1	<1.0
EBRP-14 ELUTRIATE	26 OCT 89	23 FEB 90	2.2	26	<0.1	<1.0
EBRP-15 ELUTRIATE	26 OCT 89	23 FEB 90	<1.0	30	<0.1	<1.0
Quality Control						
Certified Value			44	-	-	162
Flame Value				-		
Furnace Value			43		-	161

Notes:

All values reported in PPB (sediment in ug/kg dry)

METALS REPORT East Baton Rouge Parish

Sample Name & Type Reported in PPB.	Cu	Hg	TOTALS Reported in PPB. Mg	Ni	Pb	Zn
EBRP-1 ELUTRIATE	5.0	<0.5	7	12	<1.0	4
EBRP-2 ELUTRIATE	15	<0.5	7	20	<1.0	2
EBRP-3 ELUTRIATE	23	<0.5	6	51	<1.0	4
EBRP-4 ELUTRIATE	<1.0	<0.5	5	2.6	<1.0	4
EBRP-5 ELUTRIATE	<1.0	<0.5	7	<1.0	<1.0	5
EBRP-6 ELUTRIATE	<1.0	<0.5	5	93	<1.0	10
EBRP-7 ELUTRIATE	<1.0	0.8	5	3.2	<1.0	3
EBRP-8 ELUTRIATE	<1.0	<0.5	4	57	<1.0	6
EBRP-9 ELUTRIATE	2.1	0.9	<1	52	<1.0	14
EBRP-10 ELUTRIATE	<1.0	<0.5	2	<1.0	<1.0	3
EBRP-11 ELUTRIATE	2.6	1.1	<1	16	<1.0	16
EBRP-12 ELUTRIATE	3.2	1.0	<1	33	<1.0	16
EBRP-13 ELUTRIATE	<1.0	<0.5	<1	39	<1.0	29
EBRP-14 ELUTRIATE	<1.0	<0.5	6	13	<1.0	5
EBRP-15 ELUTRIATE	<1.0	1.5	6	79	<1.0	12
Quality Control						
Certified Value	70	6.4	-	74	160	188
Flame Value			-			
Furnace Value	73	6.3	-	84	154	186

Notes:

ANNEX 2

Tentatively Selected Plan Cost Estimate

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
01---	LANDS AND DAMAGES						
	Construction						
01B--	Acquisitions						
01B1-	By Government				9,230	2,310	11,540
01B2-	By Local Sponsor(LS)				264,090	66,050	330,140
01B4-	Review Of LS				14,910	3,740	18,650
01C--	Condemnations						
01C2	By LS				10,570	2,650	13,220
01C4-	Review of LS				8,200	2,060	10,260
01E--	Appraisals						
01E3-	By LS				283,250	71,080	354,330
01E5-	Review of LS				51,500	12,930	64,430
01G--	Temporary Permits						
01G1-	By Government				2,970	740	3,710
01G2-	By LS				21,590	5,420	27,010
01G4-	Review of LS				660	170	830
01R--	Real Estate Payments						
01R1-	Land Payments						
01R1B	By LS				263,670	66,670	330,340
01T--	LERRD Credits						
01T1-	Land Payments				12,050	3,020	15,070
01T2-	Administrative Costs				8,030	2,020	10,050
01T4-	Other				4,330	1,090	5,420
01---	Subtotal: Lands And Damages (Construction)						955,050
	Contingencies						239,950
01---	Subtotal: Lands And Damages (Construction)						1,195,000
	Mitigation						
01B--	Acquisitions						
01B1-	By Government				240	60	300
01B2-	By Local Sponsor(LS)				370	100	470
01B4-	Review Of LS				70	20	90
01C--	Condemnations						
01C2	By LS				70	20	90
01C4-	Review of LS				30	10	40
01E--	Appraisals						
01E3-	By LS				370	100	470
01E5-	Review of LS				90	20	110
01F--	PL 91-646 Assistance						
01F1-	By Government				30	10	40
01F4-	Review Of LS				10	0	10
01G--	Temporary Permits						
01G1-	By Government				100	30	130
01G2-	By LS				150	40	190
01G4-	Review of LS				30	10	40
01R--	Real Estate Payments						
01R1-	Land Payments						
01R1B	By LS				61,800	15,490	77,290

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
01T--	LERRD Credits						
01T1-	Land Payments				170	40	210
01T3-	PL 91-646 Assistance				170	40	210
01T2-	Administrative Costs				210	50	260
01T4-	Other				40	10	50
01---	Subtotal: Lands And Damages (Mitigation)						63,950
	Contingencies						16,050
01---	Subtotal: Lands And Damages (Mitigation)						80,000
01---	TOTAL: LANDS AND DAMAGES						1,275,000
02------	RELOCATIONS						
0203----	Cemeteries, Utilities And Structures						
020318--	Utilities						
02031815	4" Petroleum Products Pipeline BF-2 Permanent Relocation	1	LS	3,000.00	3,000	1,000	4,000
0203----	SUBTOTAL: Cemeteries, Utilities And Structures						3,000
	Contingencies						1,000
0203----	SUBTOTAL: Cemeteries, Utilities And Structures						4,000
02------	TOTAL: RELOCATIONS						4,000
06------	FISH AND WILDLIFE FACILITIES						
0603----	Wildlife Facilities And Sanctuaries						
060301--	Mob And Demob						
060371--	Fences						
06037102	Fencing	1,378	LF	5.45	7,510	1,954	9,464
060373--	Habitat And Feeding Facilities						
06037302	Planting	24	AC	150.00	3,600	936	4,536
06------	Subtotal: Fish And Wildlife Facilities						11,110
	Contingencies						2,890
06------	TOTAL: FISH AND WILDLIFE FACILITIES						14,000
09------	CHANNELS AND CANALS						
0901----	Channels						
090101--	Mob & Demob	Lump Sum	LS	100,000.00	100,000	19,570	119,570
09011502	Clearing and Snagging	8	MI	19,000.00	152,000	29,747	181,747
09011502	Clearing For Channel Dredging	47	AC	5,900.00	277,300	54,268	331,568
09011502	Excavation	283,000	CY	3.90	1,103,700	215,941	1,319,641
09013002	Filter Drain Fabric	6,460	SY	7.50	48,450	9,482	57,932
09013002	Sand (8" Thick)	160	CY	7.50	1,200	235	1,435
09013002	Riprap 16" - Dry Placement	890	TN	23.00	20,470	4,006	24,476
09013003	Concrete U-Channel						
	1 Ft. U-Frame Base Slab	67	CY	180.00	12,060	2,360	14,420
	1 Ft. U-Frame Wall	100	CY	300.00	30,000	5,871	35,871
	Channel Slope Pavement (4")	55	CY	130.00	7,150	1,399	8,549
	Channel Slope Pavement (6")	43	CY	150.00	6,450	1,262	7,712
	Channel Slab Pavement (8")	62	CY	150.00	9,300	1,820	11,120
09019905	Fence (chain link)	300	LF	8.25	2,475	484	2,959
09019906	Aesthetic Plantings						
	Tree Planting	1,050	EA	15.00	15,750	3,250	19,000
	Shrub Planting	1,760	EA	11.00	19,360	3,640	23,000

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
09------	SUBTOTAL: Channels And Canals						1,805,665
	Contingencies						353,335
09------	TOTAL: CHANNELS AND CANALS						2,159,000
29---	PROJECT COOPERATION AGREEMENTS						
29A--	Draft PCA						
29A1-	Real Estate Activities				600	100	700
29A9-	All Other				800	200	1,000
29B--	Final PCA and Financial Plan						
29B1-	Real Estate Activities				600	100	700
29B9-	All Other				800	200	1,000
29C--	PCA Negotiations						
29C1-	Real Estate Activities				500	100	600
29C9-	All Other				800	200	1,000
29---	Subtotal: Project Cooperation Agreements						4,100
	Contingecies						900
29---	TOTAL: PROJECT COOPERATION AGREEMENTS						5,000
30---	ENGINEERING AND DESIGN						
30DA-	Design Report & P&S				509,000	51,000	560,000
30DD-	HTRW Studies				105,000	10,000	115,000
30DF-	Cost Estimates				19,000	2,000	21,000
30DN-	VE Studies				5,000	1,000	6,000
30DS-	Construction Contract Award Activities				10,000	1,000	11,000
30DV-	Engineering During Construction				22,000	2,000	24,000
30DA-	P&S - Mitigation				4,000	1,000	5,000
30E--	Engineering And Design Phase Project Management				87,000	9,000	96,000
30Z--	Misc. Activities						
	Monitoring						
	Install Gages				5,000	1,000	6,000
	Preconstruction O&M For Gages				25,000	3,000	28,000
	PMO				50,000	5,000	55,000
	LMVD				10,000	1,000	11,000
30---	SUBTOTAL: Engineering And Design						851,000
	Contingencies						87,000
30---	TOTAL: ENGINEERING AND DESIGN						938,000
31---	CONSTRUCTION MANAGEMENT						
31B--	Contract Administration						
31B3-	Review And Approval of Contract Payments				13,000	3,000	16,000
31B4-	Contract Modifications				27,000	5,000	32,000
31B5-	Progress And Completion Reports				9,000	2,000	11,000
31B9-	All Other				40,000	8,000	48,000
31D--	Review of Shop Drawings						
31D0-	Review of Shop Drawings				10,000	2,000	12,000
31E--	Inspection & Qual. Assur.						
31E1-	Schedule Compliance				10,000	2,000	12,000
31E2-	Compliance Sampling And Testing				7,000	1,000	8,000
31E3-	Quality Surveys				28,000	6,000	34,000
31E4-	Title II Services				8,000	2,000	10,000
31E9-	All Other				131,000	26,000	157,000
31T--	Construction Phase Project Management				21,000	4,000	25,000

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
31---	SUBTOTAL: Construction Management						304,000
	Contingencies						61,000
31---	TOTAL: CONSTRUCTION MANAGEMENT						365,000
	TOTAL: BAYOU FOUNTAIN						4,760,000

JONES CREEK

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
01---	LANDS AND DAMAGES						
	Construction						
01B--	Acquisitions						
01B1-	By Government				18,460	4,710	23,170
01B2-	By Local Sponsor(LS)				19,800	5,050	24,850
01B4-	Review Of LS				5,270	1,340	6,610
						0	
01E--	Appraisals					0	
01E3-	By LS				1,000	250	1,250
01E5-	Review of LS				800	200	1,000
						0	
01G--	Temporary Permits					0	
01G1-	By Government				9,230	2,340	11,570
01G2-	By LS				13,840	3,530	17,370
01G5-	Other				2,640	670	3,310
						0	
01R--	Real Estate Payments					0	
01R1-	Land Payments					0	
01R1B	By LS				1,000	1,000	2,000
						0	
01T--	LERRD Credits					0	
01T1-	Land Payments				11,120	2,820	13,940
01T2-	Administrative Costs				13,290	3,380	16,670
01T4-	Other				3,400	860	4,260
01---	Subtotal: Lands And Damages (Construction)						99,850
	Contingencies						26,150
01---	Subtotal: Lands And Damages (Construction)						126,000
	Mitigation						
01B1-	By Government				1,090	270	1,360
01B2-	By Local Sponsor(LS)				1,710	440	2,150
01B4-	Review Of LS				320	80	400
01C--	Condemnations						
01C2	By LS				340	90	430
01C4-	Review of LS				150	40	190
01E--	Appraisals						
01E3-	By LS				1,700	430	2,130
01E5-	Review of LS				430	110	540
01F--	PL 91-646 Assistance						
01F1-	By Government				150	40	190
01F4-	Review Of LS				50	10	60
01G--	Temporary Permits						
01G1-	By Government				480	120	600
01G2-	By LS				680	170	850
01G4-	Review of LS				140	40	180
01R--	Real Estate Payments						
01R1-	Land Payments						
01R1B	By LS				283,250	71,320	354,570
01T--	LERRD Credits						
01T1-	Land Payments				770	190	960
01T3-	PL 91-646 Assistance				760	190	950
01T2-	Administrative Costs				960	240	1,200
01T4-	Other				190	50	240

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
01---	Subtotal: Lands And Damages (Mitigation)						293,170
	Contingencies						73,830
01---	Subtotal: Lands And Damages (Mitigation)						367,000
01---	TOTAL: LANDS AND DAMAGES						493,000
06------	FISH AND WILDLIFE FACILITIES						
0603----	Wildlife Facilities And Sanctuaries						
060301--	Mob And Demob						
060371--	Fences						
06037102	Fencing	6,432	LF	5.45	35,054	9,016	44,070
060373--	Habitat And Feeding Facilities						
06037302	Planting	111	AC	150.00	16,650	4,280	20,930
06------	Subtotal: Fish And Wildlife Facilities						51,704
	Contingencies						13,296
06------	TOTAL: FISH AND WILDLIFE FACILITIES						65,000
09------	CHANNELS AND CANALS						
0901----	Channels						
090101--	Mob & Demob	Lump Sum	LS	470,000.00	470,000	117,500	587,500
09011502	Clearing For Channel Dredging	272	AC	3,100.00	843,200	210,800	1,054,000
09011502	Degrading, Hauling, Shaping (16 Miles)	162,000	CY	10.00	1,620,000	810,000	2,430,000
09011502	Clearing and Snagging	3	MI	19,000.00	57,000	14,250	71,250
09013002	Sand (8" Thick)	84,000	CY	11.60	974,400	243,600	1,218,000
09013002	Filter Drain Fabric	418,700	SY	7.50	3,140,250	785,062	3,925,312
09013002	Fuseplug Dams	Lump Sum	LS	108,000.00	108,000	27,000	135,000
09013003	Concrete Lining						
	Cutoff Wall	6,150	CY	150.00	922,500	230,625	1,153,125
	Channel Slope Pavement (4")	82,300	CY	130.00	10,699,000	2,670,000	13,369,000
	Channel Slope Pavement (6")	61,300	CY	150.00	9,195,000	2,300,000	11,495,000
	Channel Slab Pavement (8")	11,000	CY	150.00	1,650,000	412,500	2,062,500
	Drain Ditch	33,100	CY	130.00	4,303,000	1,080,000	5,383,000
09019905	Fencing (chain link)	171,000	LF	8.25	1,410,750	352,563	1,763,313
09019906	Aesthetic Planting						
	Aesthetic Tree Planting	1,800	EA	15.00	27,000	6,500	33,500
	Aesthetic Shrub Planting	3,000	EA	11.00	33,000	8,500	41,500
09------	SUBTOTAL: Channels And Canals						35,453,100
	Contingencies						9,268,900
09------	TOTAL: CHANNELS AND CANALS						44,722,000
14------	RECREATION FACILITIES						
14002202	Bridge - 10' X 50'	Lump Sum	LS	23,500.00	23,500	5,500	29,000
14002202	Bridge - 10' X 150'	Lump Sum	LS	106,000.00	106,000	26,500	132,500
14002202	Signs & Markers	20	EA	160.00	3,200	800	4,000
14002202	Trees	4,431	EA	15.00	66,465	16,600	83,065
14002202	Fence (6' Wooden)	55,440.0	LF	12.80	709,632	177,803	887,435
14------	SUBTOTAL: Recreation Facilities						908,797
	Contingencies						227,203
14------	TOTAL: RECREATION FACILITIES						1,136,000

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
29---	PROJECT COOPERATION AGREEMENTS						
29A--	Draft PCA						
29A9-	All Other				600	100	700
29B--	Final PCA and Financial Plan						
29B9-	All Other				600	100	700
29C--	PCA Negotiations						
29C9-	All Other				500	100	600
29---	Subtotal: Project Cooperation Agreements						1,700
	Contingecies						300
29---	TOTAL: PROJECT COOPERATION AGREEMENTS						2,000
30---	ENGINEERING AND DESIGN						
30C--	Design Memorandum				878,000	176,000	1,054,000
30CD-	HTRW Studies				125,000	12,000	137,000
30CF-	Cost Estimates				21,000	4,000	25,000
30CN-	VE Studies				30,000	6,000	36,000
30DA-	P&S #1 -				200,000	40,000	240,000
30DF-	Cost Estimates				14,000	3,000	17,000
30DN-	VE Studies				5,000	1,000	6,000
30DA-	P&S #2 -				205,000	41,000	246,000
30DF-	Cost Estimates				14,000	3,000	17,000
30DN-	VE Studies				5,000	1,000	6,000
30DA-	P&S #3 -				162,000	32,000	194,000
30DF-	Cost Estimates				12,000	2,000	14,000
30DN-	VE Studies				5,000	1,000	6,000
30DA-	P&S #4 -				110,000	22,000	132,000
30DF-	Cost Estimates				10,000	2,000	12,000
30DN-	VE Studies				5,000	1,000	6,000
30DA-	P&S - Mitigation				20,000	4,000	24,000
30DS-	Construction Contract Award Activities				40,000	8,000	48,000
30DV-	Engineering During Construction				115,000	23,000	138,000
30E--	Engineering And Design Phase Project Management				144,000	29,000	173,000
30Z--	Misc. Activities						
	Monitoring						
	Install Gages				35,000	7,000	42,000
	Preconstruction O&M For Gages				158,000	32,000	190,000
	PMO				179,000	36,000	215,000
	LMVD				12,000	2,000	14,000
30---	SUBTOTAL: Engineering And Design						2,504,000
	Contingencies						488,000
30---	TOTAL: ENGINEERING AND DESIGN						2,992,000
31---	CONSTRUCTION MANAGEMENT						
31B--	Contract Administration						
31B3-	Review And Approval of Contract Payments				94,000	19,000	113,000
31B4-	Contract Modifications				279,000	56,000	335,000
31B5-	Progress And Completion Reports				115,000	23,000	138,000
31B9-	All Other				398,000	80,000	478,000

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
31D--	Review of Shop Drawings						
31D0-	Review of Shop Drawings				75,000	15,000	90,000
31E--	Inspection & Qual. Assur.						
31E1-	Schedule Compliance				73,000	15,000	88,000
31E2-	Compliance Sampling And Testing				79,000	16,000	95,000
31E3-	Quality Surveys				180,000	36,000	216,000
31E4-	Title II Services				151,000	30,000	181,000
31E9-	All Other				1,063,000	213,000	1,276,000
31T--	Construction Phase Project Management				142,000	28,000	170,000
31---	SUBTOTAL: Construction Management						2,649,000
	Contingencies						531,000
31---	TOTAL: CONSTRUCTION MANAGEMENT						3,180,000
	TOTAL: JONES CREEK						52,590,000

WARD CREEK

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
01---	LANDS AND DAMAGES						
	Construction						
	Acquisitions						
01B1-	By Government				5,060	1,330	6,390
01B2-	By Local Sponsor(LS)				1,940	510	2,450
01B4-	Review Of LS				2,260	590	2,850
01G--	Temporary Permits						
01G1-	By Government				2,310	610	2,920
01G2-	By LS				3,460	910	4,370
01G4-	Review of LS				490	130	620
01R--	Real Estate Payments						
01R1-	Land Payments						
01R1B	By LS				1,330	1,330	2,660
01T--	LERRD Credits						
01T1-	Land Payments				11,120	2,920	14,040
01T2-	Administrative Costs				5,870	1,540	7,410
01T4-	Other				3,400	890	4,290
01---	Subtotal: Lands And Damages (Construction)						37,240
	Contingencies						10,760
01---	Subtotal: Lands And Damages (Construction)						48,000
	Mitigation						
01B1-	By Government				320	80	400
01B2-	By Local Sponsor(LS)				500	130	630
01B4-	Review Of LS				90	20	110
01C--	Condemnations						
01C2	By LS				100	30	130
01C4-	Review of LS				50	10	60
01E--	Appraisals						
01E3-	By LS				490	130	620
01E5-	Review of LS				120	30	150
01F--	PL 91-646 Assistance						
01F1-	By Government				50	10	60
01F4-	Review Of LS				20	10	30
01G--	Temporary Permits						
01G1-	By Government				140	40	180
01G2-	By LS				200	50	250
01G4-	Review of LS				40	10	50
01R--	Real Estate Payments						
01R1-	Land Payments						
01R1B	By LS				82,400	20,940	103,340
01T--	LERRD Credits						
01T1-	Land Payments				220	60	280
01T3-	PL 91-646 Assistance				220	60	280
01T2-	Administrative Costs				280	70	350
01T4-	Other				60	20	80
01---	Subtotal: Lands And Damages (Mitigation)						85,300
	Contingencies						21,700
01---	Subtotal: Lands And Damages (Mitigation)						107,000
01---	TOTAL: LANDS AND DAMAGES						155,000

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
06------	FISH AND WILDLIFE FACILITIES						
0603----	Wildlife Facilities And Sanctuaries						
060301--	Mob And Demob						
060371--	Fences						
06037102	Fencing	1,838	LF	5.45	10,017	2,828	12,845
060373--	Habitat And Feeding Facilities						
06037302	Planting	32	AC	150.00	4,800	1,355	6,155
06------	Subtotal: Fish And Wildlife Facilities						14,817
	Contingencies						4,183
06------	TOTAL: FISH AND WILDLIFE FACILITIES						19,000
09------	CHANNELS AND CANALS						
0901----	Channels						
090101--	Mob & Demob	Lump Sum	LS	150,000.00	150,000	36,806	186,806
09011502	Clearing For Channel Dredging	20	AC	5,900.00	118,000	28,954	146,954
09011502	Excavation	143,000	CY	6.75	965,250	236,850	1,202,100
09011502	Clearing and Snagging	13	MI	19,000.00	247,000	60,608	307,608
09013002	Sand (8" Thick)	13,200	CY	10.50	138,600	34,009	172,609
09013002	Filter Drain Fabric	59,300	SY	7.50	444,750	109,131	553,881
09013002	Fuseplug Dams	Lump Sum	LS	40,000.00	40,000	9,815	49,815
09013003	Concrete Lining						
	Cutoff Wall	400	CY	150.00	60,000	14,723	74,723
	Channel Slope Pavement (4")	8,800	CY	130.00	1,144,000	284,810	1,428,810
	Channel Slope Pavement (6")	6,600	CY	150.00	990,000	246,510	1,236,510
	Channel Slab Pavement (8")	4,500	CY	150.00	675,000	165,629	840,629
	Drain Ditch	2,200	CY	130.00	286,000	70,178	356,178
09019902	Construction Access						
	Excavation	6,500	CY	7.25	47,125	11,563	58,688
	Filter Fabric	19,400	SY	3.50	67,900	16,661	84,561
	Crushed Stone	9,000	TN	24.00	216,000	53,001	269,001
	Obstruction Removal	5,600	LF	10.00	56,000	13,741	69,741
09019905	Fencing (chain link)	11,200	LF	8.25	92,400	22,673	115,073
09019906	Aesthetic Plantings						
	Tree Planting	650	EA	15.00	9,750	2,438	12,188
	Shrub Planting	1,100	EA	11.00	12,100	3,025	15,125
09------	SUBTOTAL: Channels And Canals						5,759,875
	Contingencies						1,421,125
09------	TOTAL: CHANNELS AND CANALS						7,181,000
29---	PROJECT COOPERATION AGREEMENTS						
29A--	Draft PCA						
29A9-	All Other				800	200	1,000
29B--	Final PCA and Financial Plan						
29B9-	All Other				800	200	1,000
29C--	PCA Negotiations						
29C9-	All Other				800	200	1,000
29---	Subtotal: Project Cooperation Agreements						2,400
	Contingecies						600
29---	TOTAL: PROJECT COOPERATION AGREEMENTS						3,000

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
30---	ENGINEERING AND DESIGN						
30C--	Design Memorandum				595,000	118,000	713,000
30CD-	HTRW Studies				123,000	12,000	135,000
30CF-	Cost Estimates				18,000	4,000	22,000
30CN-	VE Studies				30,000	6,000	36,000
30DA-	P&S				187,000	37,000	224,000
30DF-	Cost Estimates				14,000	3,000	17,000
30DN-	VE Studies				5,000	1,000	6,000
30DA-	P&S - Mitigation				7,000	2,000	9,000
30DS-	Construction Contract Award Activities				10,000	2,000	12,000
30DV-	Engineering During Construction				28,000	6,000	34,000
30E--	Engineering And Design Phase Project Management				81,000	16,000	97,000
30Z--	Misc. Activities						
	Monitoring						
	Install Gages				22,000	4,000	26,000
	Preconstruction O&M For Gages				120,000	24,000	144,000
	PMO				50,000	10,000	60,000
	LMVD				13,000	3,000	16,000
30---	SUBTOTAL: Engineering And Design						1,303,000
	Contingencies						248,000
30---	TOTAL: ENGINEERING AND DESIGN						1,551,000
31---	CONSTRUCTION MANAGEMENT						
31B--	Contract Administration						
31B3-	Review And Approval of Contract Payments				19,000	4,000	23,000
31B4-	Contract Modifications				45,000	9,000	54,000
31B5-	Progress And Completion Reports				15,000	3,000	18,000
31B9-	All Other				65,000	13,000	78,000
31D--	Review of Shop Drawings						
31D0-	Review of Shop Drawings				15,000	3,000	18,000
31E--	Inspection & Qual. Assur.						
31E1-	Schedule Compliance				15,000	3,000	18,000
31E2-	Compliance Sampling And Testing				14,000	3,000	17,000
31E3-	Quality Surveys				30,000	6,000	36,000
31E4-	Title II Services				17,000	3,000	20,000
31E9-	All Other				199,000	40,000	239,000
31T--	Construction Phase Project Management				33,000	7,000	40,000
31---	SUBTOTAL: Construction Management						467,000
	Contingencies						94,000
31---	TOTAL: CONSTRUCTION MANAGEMENT						561,000
	TOTAL: WARD CREEK						9,470,000

BEAVER BAYOU

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
01---	LANDS AND DAMAGES						
	Construction						
01B--	Acquisitions						
01B1-	By Government				7,580	1,900	9,480
01B2-	By Local Sponsor(LS)				103,820	25,850	129,670
01B4-	Review Of LS				6,180	1,550	7,730
01C--	Condemnations						
01C2	By LS				12,220	3,040	15,260
01C4-	Review of LS				3,610	900	4,510
01E--	Appraisals						
01E3-	By LS				103,000	25,750	128,750
01E5-	Review of LS				20,600	5,130	25,730
01G--	Temporary Permits						
01G1-	By Government				2,310	580	2,890
01G2-	By LS				8,360	2,090	10,450
01G4-	Review of LS				660	170	830
01R--	Real Estate Payments						
01R1-	Land Payments						
01R1B	By LS				898,000	225,000	1,123,000
01T--	LERRD Credits						
01T1-	Land Payments				6,490	1,620	8,110
01T2-	Administrative Costs				5,870	1,470	7,340
01T4-	Other				3,400	850	4,250
01---	Subtotal: Lands And Damages (Construction)						1,182,100
	Contingencies						295,900
01---	Subtotal: Lands And Damages (Construction)						1,478,000
	Mitigation						
01B1-	By Government				1,230	310	1,540
01B2-	By Local Sponsor(LS)				1,930	480	2,410
01B4-	Review Of LS				360	90	450
01C--	Condemnations						
01C2	By LS				380	100	480
01C4-	Review of LS				170	40	210
01E--	Appraisals						
01E3-	By LS				1,920	480	2,400
01E5-	Review of LS				480	120	600
01F--	PL 91-646 Assistance						
01F1-	By Government				170	40	210
01F4-	Review Of LS				70	20	90
01G--	Temporary Permits						
01G1-	By Government				540	140	680
01G2-	By LS				770	190	960
01G4-	Review of LS				150	40	190
01R--	Real Estate Payments						
01R1-	Land Payments						
01R1B	By LS				319,300	79,700	399,000
01T--	LERRD Credits						
01T1-	Land Payments				860	220	1,080
01T3-	PL 91-646 Assistance				860	220	1,080
01T2-	Administrative Costs				1,080	270	1,350
01T4-	Other				220	50	270

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
01---	Subtotal: Lands And Damages (Mitigation)						330,490
	Contingencies						82,510
01---	Subtotal: Lands And Damages (Mitigation)						413,000
01---	TOTAL: LANDS AND DAMAGES						1,891,000
02------	RELOCATIONS						
0201----	Roads, Construction Activities						
0201----	La Hwy #408 (Hooper Road) BB-10 2-Lane, Class-4 Road (Med Duty) Permanent Relocation	1	LS	325,000.00	325,000	81,569	406,569
0201----	Wax Road Culverts BB-14 2-Lane, Class-4 Road (Med Duty) Permanent Relocation	1	LS	315,000.00	315,000	79,059	394,059
0201----	La Hwy #37 Bridge BB-19 2-Lane, Class-4 Road (Med Duty) Permanent Relocation	1	LS	380,000.00	380,000	95,372	475,372
0201----	SUBTOTAL: Roads						1,020,000
	Contingencies						256,000
0201----	SUBTOTAL: Roads						1,276,000
0203----	Cemeteries, Utilities And Structures						
020318--	Utilities						
02031815	3" Gas Pipeline BB-9 Permanent Relocation	1	LS	75,200.00	75,200	18,929	94,129
02031815	4" Gas Pipeline BB-12 Permanent Relocation	1	LS	84,000.00	84,000	21,144	105,144
02031815	5" Water Line BB-13 Permanent Relocation	1	LS	67,200.00	67,200	16,916	84,116
02031815	4" Gas Pipeline BB-16 Permanent Relocation	1	LS	80,000.00	80,000	20,138	100,138
02031815	6" Gas Pipeline BB-17 Permanent Relocation	1	LS	80,800.00	80,800	20,339	101,139
02031815	8" Water Line BB-18 Permanent Relocation	1	LS	66,400.00	66,400	16,714	83,114
02031815	5" Water Line BB-21 Permanent Relocation	1	LS	96,640.00	96,640	24,326	120,966
02031815	4" Gas Pipeline BB-22 Permanent Relocation	1	LS	112,000.00	112,000	28,254	140,254
0203----	SUBTOTAL: Cemeteries, Utilities And Structures						662,240
	Contingencies						166,760
0203----	SUBTOTAL: Cemeteries, Utilities And Structures						829,000
02------	TOTAL: RELOCATIONS						2,105,000
06------	FISH AND WILDLIFE FACILITIES						
0603----	Wildlife Facilities And Sanctuaries						
060301--	Mob And Demob						
060371--	Fences						
06037102	Fencing	7,121	LF	5.45	38,809	9,999	48,808
060373--	Habitat And Feeding Facilities						
06037302	Planting	123	AC	150.00	18,450	4,742	23,192
06------	Subtotal: Fish And Wildlife Facilities						57,259
	Contingencies						14,741
06------	TOTAL: FISH AND WILDLIFE FACILITIES						72,000

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
09------	CHANNELS AND CANALS						
0901----	Channels						
090101--	Mob & Demob	Lump Sum	LS	220,000.00	220,000	43,444	263,444
09011502	Clearing For Channel Dredging	220	AC	5,900.00	1,298,000	256,321	1,554,321
09011502	Excavation	695,000	CY	5.60	3,892,000	768,567	4,660,567
09013002	Geotextile Mat						
	Turf Reinforcement	545,100	SY	6.00	3,270,600	645,927	3,916,527
	R-90 Stone	130,200	TN	18.50	2,408,700	475,655	2,884,355
	Hydromulch	322,400	SY	0.25	80,600	15,916	96,516
	Excavation For Stone	115,700	CY	5.60	647,920	127,947	775,867
09013002	Fuseplug dams	Lump Sum	LS	78,000.00	78,000	15,403	93,403
09019906	Aesthetic Plantings						
	Tree Planting	4,500	EA	15.00	67,500	16,500	84,000
09------	SUBTOTAL: Channels And Canals						11,963,320
	Contingencies						2,365,680
09------	TOTAL: CHANNELS AND CANALS						14,329,000
29---	PROJECT COOPERATION AGREEMENTS						
29A--	Draft PCA						
29A1-	Real Estate Activities				600	100	700
29A9-	All Other				800	200	1000
29B--	Final PCA and Financial Plan						
29B1-	Real Estate Activities				600	100	700
29B9-	All Other				800	200	1,000
29C--	PCA Negotiations						
29C1-	Real Estate Activities				500	100	600
29C9-	All Other				800	200	1,000
29---	Subtotal: Project Cooperation Agreements						4,100
	Contingecies						900
29---	TOTAL: PROJECT COOPERATION AGREEMENTS						5,000
30---	ENGINEERING AND DESIGN						
30C--	Design Memorandum				571,000	114,000	685,000
30CD-	HTRW Studies				136,000	14,000	150,000
30CF-	Cost Estimates				18,000	4,000	22,000
30GD-	VE Studies				30,000	6,000	36,000
30DA-	P&S				174,000	35,000	209,000
30DF-	Cost Estimates				14,000	3,000	17,000
30DN-	VE Studies				5,000	1,000	6,000
30DA-	P&S - Mitigation				29,000	6,000	35,000
30DS-	Construction Contract Award Activities				10,000	2,000	12,000
30DV-	Engineering During Construction				30,000	6,000	36,000
30E--	Engineering And Design Phase Project Management				87,000	17,000	104,000
30Z--	Misc. Activities						
	Monitoring						
	Install Gages				15,000	3,000	18,000
	Preconstruction O&M For Gages				63,000	13,000	76,000
	PMO				58,000	12,000	70,000
	LMVD				10,000	2,000	12,000

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
30---	SUBTOTAL: Engineering And Design						1,250,000
	Contingencies						238,000
30---	TOTAL: ENGINEERING AND DESIGN						1,488,000
31---	CONSTRUCTION MANAGEMENT						
31B--	Contract Administration						
31B3-	Review And Approval of Contract Payments				18,000	4,000	22,000
31B4-	Contract Modifications				62,000	12,000	74,000
31B5-	Progress And Completion Reports				27,000	5,000	32,000
31B9-	All Other				88,000	18,000	106,000
31D--	Review of Shop Drawings						
31D0-	Review of Shop Drawings				15,000	3,000	18,000
31E--	Inspection & Qual. Assur.						
31E1-	Schedule Compliance				14,000	3,000	17,000
31E2-	Compliance Sampling And Testing				12,000	2,000	14,000
31E3-	Quality Surveys				36,000	7,000	43,000
31E4-	Title II Services				38,000	8,000	46,000
31E9-	All Other				219,000	44,000	263,000
31T--	Construction Phase Project Management				54,000	11,000	65,000
31---	SUBTOTAL: Construction Management						583,000
	Contingencies						117,000
31---	TOTAL: CONSTRUCTION MANAGEMENT						700,000
	TOTAL: BEAVER BAYOU						20,590,000

BLACKWATER BAYOU

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
01---	LANDS AND DAMAGES						
	Construction						
01B--	Acquisitions						
01B1-	By Government				7,580	1,900	9,480
01B2-	By Local Sponsor(LS)				103,820	25,960	129,780
01B4-	Review Of LS				6,120	1,530	7,650
01C--	Condemnations						
01C2	By LS				13,140	3,290	16,430
01C4-	Review of LS				3,480	870	4,350
01E--	Appraisals						
01E3-	By LS				103,000	25,710	128,710
01E5-	Review of LS				20,600	5,150	25,750
01G--	Temporary Permits						
01G1-	By Government				2,310	580	2,890
01G2-	By LS				8,360	2,070	10,430
01G4-	Review of LS				660	170	830
01R--	Real Estate Payments						
01R1-	Land Payments						
01R1B	By LS				898,000	225,000	1,123,000
01T--	LERRD Credits						
01T1-	Land Payments				6,490	1,620	8,110
01T2-	Administrative Costs				5,870	1,470	7,340
01T4-	All Other				3,400	850	4,250
01---	Subtotal: Lands And Damages (Construction)						1,182,830
	Contingencies						296,170
01---	Subtotal: Lands And Damages (Construction)						1,479,000
	Mitigation						
01B1-	By Government				1,090	280	1,370
01B2-	By Local Sponsor(LS)				1,710	430	2,140
01B4-	Review Of LS				320	80	400
01C--	Condemnations						
01C2	By LS				340	90	430
01C4-	Review of LS				150	40	190
01E--	Appraisals						
01E3-	By LS				1,700	430	2,130
01E5-	Review of LS				430	110	540
01F--	PL 91-646 Assistance				150	40	190
01F1-	By Government				50	10	60
01F4-	Review Of LS						
01G--	Temporary Permits						
01G1-	By Government				480	120	600
01G2-	By LS				680	170	850
01G4-	Review of LS				140	40	180
01R--	Real Estate Payments						
01R1-	Land Payments						
01R1B	By LS				283,250	71,320	354,570
01T--	LERRD Credits						
01T1-	Land Payments				770	190	960
01T3-	PL 91-646 Assistance				760	190	950
01T2-	Administrative Costs				960	240	1,200
01T4-	Other				190	50	240

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
01---	Subtotal: Lands And Damages (Mitigation)						293,170
	Contingencies						73,830
01---	Subtotal: Lands And Damages (Mitigation)						367,000
01---	TOTAL: LANDS AND DAMAGES						1,846,000
02------	RELOCATIONS						
0201----	Roads, Construction Activities						
0201----	McCullough Road Bridge BW-2 2-Lane, Class-6 Road (Light Duty) Permanent Relocation	1	LS	154,960.00	154,960	38,717	193,677
0201----	Blackwater Road Bridge BW-3 (Med Duty) Permanent Relocation	1	LS	201,760.00	201,760	50,410	252,170
0201----	Dyer Road Bridge BW-4 2-Lane, Class-4 Road (Med Duty) Permanent Relocation	1	LS	215,200.00	215,200	53,767	268,967
0201----	Carey Road Bridge BW-5 2-Lane, Class-4 Road (Light Duty) Permanent Relocation	1	LS	167,840.00	167,840	41,934	209,774
0201----	Blackwater Road Bridge BW-6 2-Lane, Class-4 Road (Med Duty) Permanent Relocation	1	LS	269,040.00	269,040	67,220	336,260
0201----	Crumholt Road Bridge BW-10 2-Lane, Class-6 Road (Light Duty) Permanent Relocation	1	LS	176,480.00	176,480	44,094	220,574
0201----	Core Lane Bridge BW1-3 2-Lane, Class-6 Road (Light Duty) Permanent Relocation	1	LS	138,880.00	138,880	34,698	173,578
0201----	SUBTOTAL: Roads						1,324,160
	Contingencies						330,840
0201----	SUBTOTAL: Roads						1,655,000
0203----	Cemeteries, Utilities And Structures						
020318--	Utilities						
02031815	12" Petroleum Products Pipeline BW-8 Permanent Relocation	1	LS	60,240.00	60,240	15,162	75,402
02031815	18" Petroleum Products Pipeline BW-8A Permanent Relocation	1	LS	100,320.00	100,320	25,251	125,571
02031815	16" Petroleum Products Pipeline BW-9 Permanent Relocation	1	LS	88,480.00	88,480	22,270	110,750
02031815	16" Petroleum Products Pipeline BW1-6 Permanent Relocation	1	LS	102,480.00	102,480	25,797	128,277
0203----	SUBTOTAL: Cemeteries, Utilities And Structures						351,520
	Contingencies						88,480
0203----	SUBTOTAL: Cemeteries, Utilities And Structures						440,000
02------	TOTAL: RELOCATIONS						2,095,000
06------	FISH AND WILDLIFE FACILITIES						
0603----	Wildlife Facilities And Sanctuaries						
060301--	Mob And Demob						
060371--	Fences						
06037102	Fencing	6,203	LF	5.45	33,806	8,544	42,350
060373--	Habitat And Feeding Facilities						
06037302	Planting	107	AC	150.00	16,050	3,600	19,650

Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
06------	Subtotal: Fish And Wildlife Facilities						49,856
	Contingencies						12,144
06------	TOTAL: FISH AND WILDLIFE FACILITIES						62,000
09------	CHANNELS AND CANALS						
0901----	Channels						
090101--	Mob & Demob	Lump Sum	LS	150,000.00	150,000	29,777	179,777
09011502	Clearing For Channel Dredging	164	AC	5,900.00	967,600	192,146	1,159,746
09011502	Excavation	517,600	CY	5.10	2,639,760	524,201	3,163,961
09013002	Geotextile Mat						
	Turf reinforcement	887,000	SY	6.00	5,322,000	1,060,000	6,382,000
	R-90 Stone	137,800	TN	19.50	2,687,100	533,577	3,220,677
	Hydromulch	551,500	SY	0.25	137,875	27,379	165,254
	Excavation For Stone	141,400	CY	5.10	721,140	143,196	864,336
09013002	Fuseplug dams	Lump Sum	LS	102,000.00	102,000	20,249	122,249
09019906	Aesthetic Plantings						
	Aesthetic Tree Planting	5,700	EA	15.00	85,500	21,500	107,000
09------	SUBTOTAL: Channels And Canals						12,812,975
	Contingencies						2,552,025
09------	TOTAL: CHANNELS AND CANALS						15,365,000
29---	PROJECT COOPERATION AGREEMENTS						
29A--	Draft PCA						
29A1-	Real Estate Activities				600	100	700
29A9-	All Other				800	200	1,000
29B--	Final PCA and Financial Plan						
29B1-	Real Estate Activities				600	100	700
29B9-	All Other				800	200	1,000
29C--	PCA Negotiations						
29C1-	Real Estate Activities				500	100	600
29C1-	All Other				800	200	1,000
29---	Subtotal: Project Cooperation Agreements						4,100
	Contingecies						900
29---	TOTAL: PROJECT COOPERATION AGREEMENTS						5,000
30---	ENGINEERING AND DESIGN						
30C--	Design Memorandum				660,000	132,000	792,000
30CD-	HTRW Studies				55,000	5,000	60,000
30CF-	Cost Estimates				18,000	4,000	22,000
30CN-	VE Studies				30,000	6,000	36,000
30DA-	P&S				171,000	34,000	205,000
30DF-	Cost Estimates				14,000	3,000	17,000
30DN-	VE Studies				5,000	1,000	6,000
30DA-	P&S - Mitigation				23,000	5,000	28,000
30Q--	Construction And Supply Contract Award Activities				10,000	2,000	12,000
30DV-	Engineering During Construction				28,000	6,000	34,000
30E--	Engineering And Design Phase Project Management				86,000	17,000	103,000

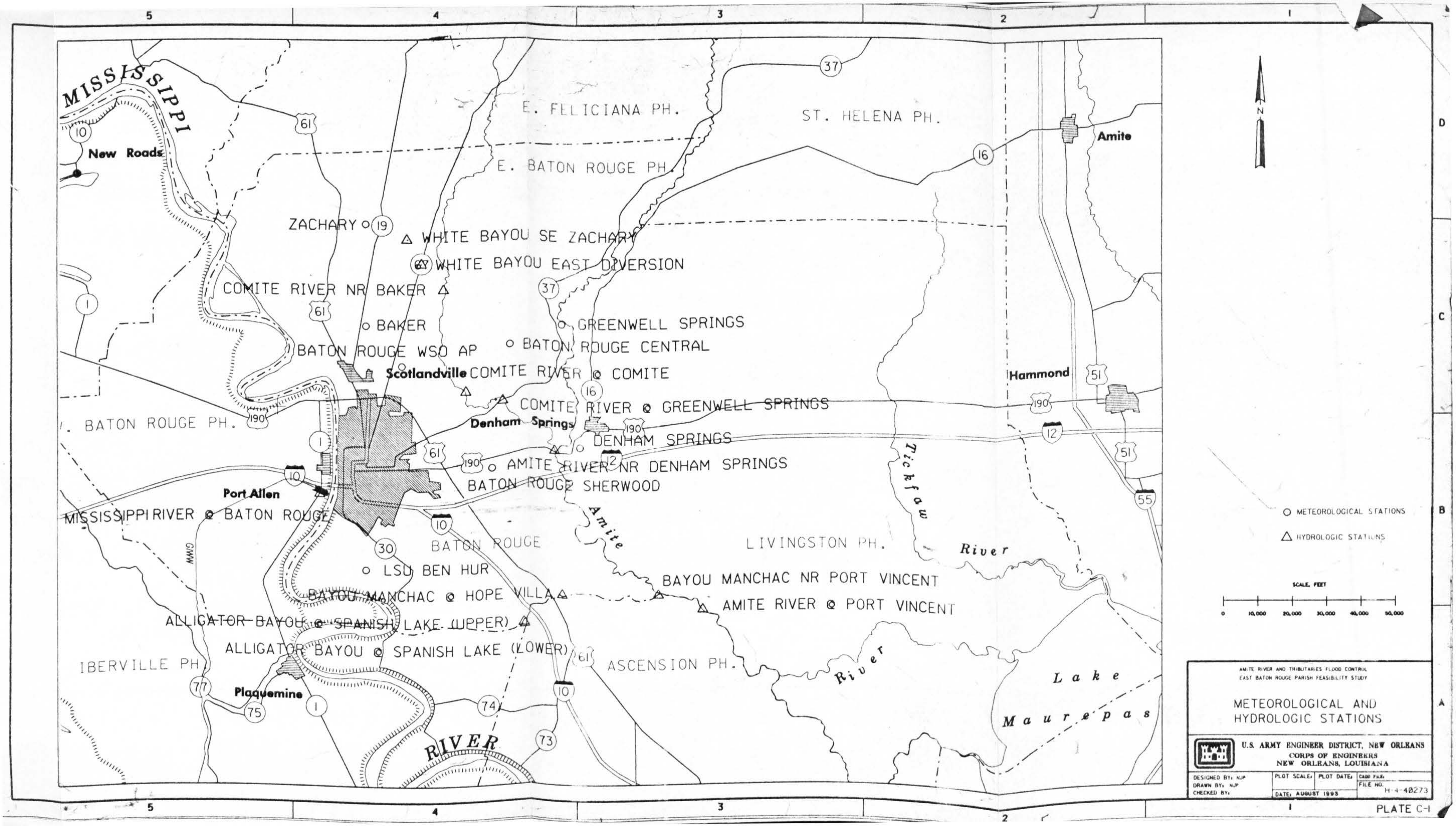
Account Code	Item	Quantity	Unit	Unit Price	Amount	Contingencies	Project Cost
30Z--	Misc. Activities						
	Monitoring						
	Install Gages				12,000	2,000	14,000
	Preconstruction O&M For Gages				43,000	9,000	52,000
	PMO				58,000	12,000	70,000
	LMVD				13,000	3,000	16,000
30---	SUBTOTAL: Engineering And Design						1,226,000
	Contingencies						241,000
30---	TOTAL: ENGINEERING AND DESIGN						1,467,000
31---	CONSTRUCTION MANAGEMENT						
31B--	Contract Administration						
31B3-	Review And Approval of Contract Payments				24,000	5,000	29,000
31B4-	Contract Modifications				76,000	15,000	91,000
31B5-	Progress And Completion Reports				32,000	7,000	39,000
31B9-	All Other				107,000	21,000	128,000
31D--	Review of Shop Drawings						
31D0-	Review of Shop Drawings				19,000	4,000	23,000
31E--	Inspection & Qual. Assur.						
31E1-	Schedule Compliance				18,000	4,000	22,000
31E2-	Compliance Sampling And Testing				15,000	3,000	18,000
31E3-	Quality Surveys				47,000	9,000	56,000
31E4-	Title II Services				43,000	9,000	52,000
31E9-	All Other				281,000	56,000	337,000
31T--	Construction Phase Project Management				46,000	9,000	55,000
31---	SUBTOTAL: Construction Management						708,000
	Contingencies						142,000
31---	TOTAL: CONSTRUCTION MANAGEMENT						850,000
	TOTAL: BLACKWATER BAYOU						21,690,000
	<u>TOTAL EAST BATON ROUGE PARISH PROJECT COST</u>						109,100,000

The above construction cost estimate was prepared by Cost Engineeering Branch
The above real estate estimate was prepared by Real Estate Division

CHARLES E. SETTOON
Chief, Cost Engineering Branch
Date: 27 Sep 94

Clyde H. Sellers
CLYDE H. SELLERS
Chief, Real Estate Division
Date: 3 Oct 94

for DOMINGO ELGUEZABAL
Project Manager
Date: 3 Oct 94


MISSISSIPPI
New Roads
E. FELICIANA PH.
ST. HELENA PH.
Amite
E. BATON ROUGE PH.
ZACHARY
WHITE BAYOU SE ZACHARY
WHITE BAYOU EAST DIVERSION
COMITE RIVER NR BAKER
BAKER
GREENWELL SPRINGS
BATON ROUGE WSO AP
BATON ROUGE CENTRAL
Scotlandville
COMITE RIVER
COMITE
COMITE RIVER
GREENWELL SPRINGS
Hammond
BATON ROUGE PH.
Denham Springs
DENHAM SPRINGS
AMITE RIVER NR DENHAM SPRINGS
BATON ROUGE SHERWOOD
Port Allen
MISSISSIPPI RIVER
BATON ROUGE
Tickfaw
River
Amite
BATON ROUGE
LIVINGSTON PH.
LSU BEN HUR
BAYOU MANCHAC NR PORT VINCENT
BAYOU MANCHAC
HOPE VILLA
AMITE RIVER
PORT VINCENT
ALLIGATOR BAYOU
SPANISH LAKE (UPPER)
ALLIGATOR BAYOU
SPANISH LAKE (LOWER)
IBERVILLE PH.
ASCENSION PH.
River
Lake
Maurepas
Plaquemine
RIVER
GIWW
METEOROLOGICAL STATIONS
HYDROLOGIC STATIONS
SCALE, FEET
0
10,000
20,000
30,000
40,000
50,000
AMITE RIVER AND TRIBUTARIES FLOOD CONTROL
EAST BATON ROUGE PARISH FEASIBILITY STUDY
METEOROLOGICAL AND
HYDROLOGIC STATIONS
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA
DESIGNED BY: NJP
DRAWN BY: NJP
CHECKED BY:
PLOT SCALE:
PLOT DATE:
DATE: AUGUST 1993
FILE NO.
H-4-40273
PLATE C-1

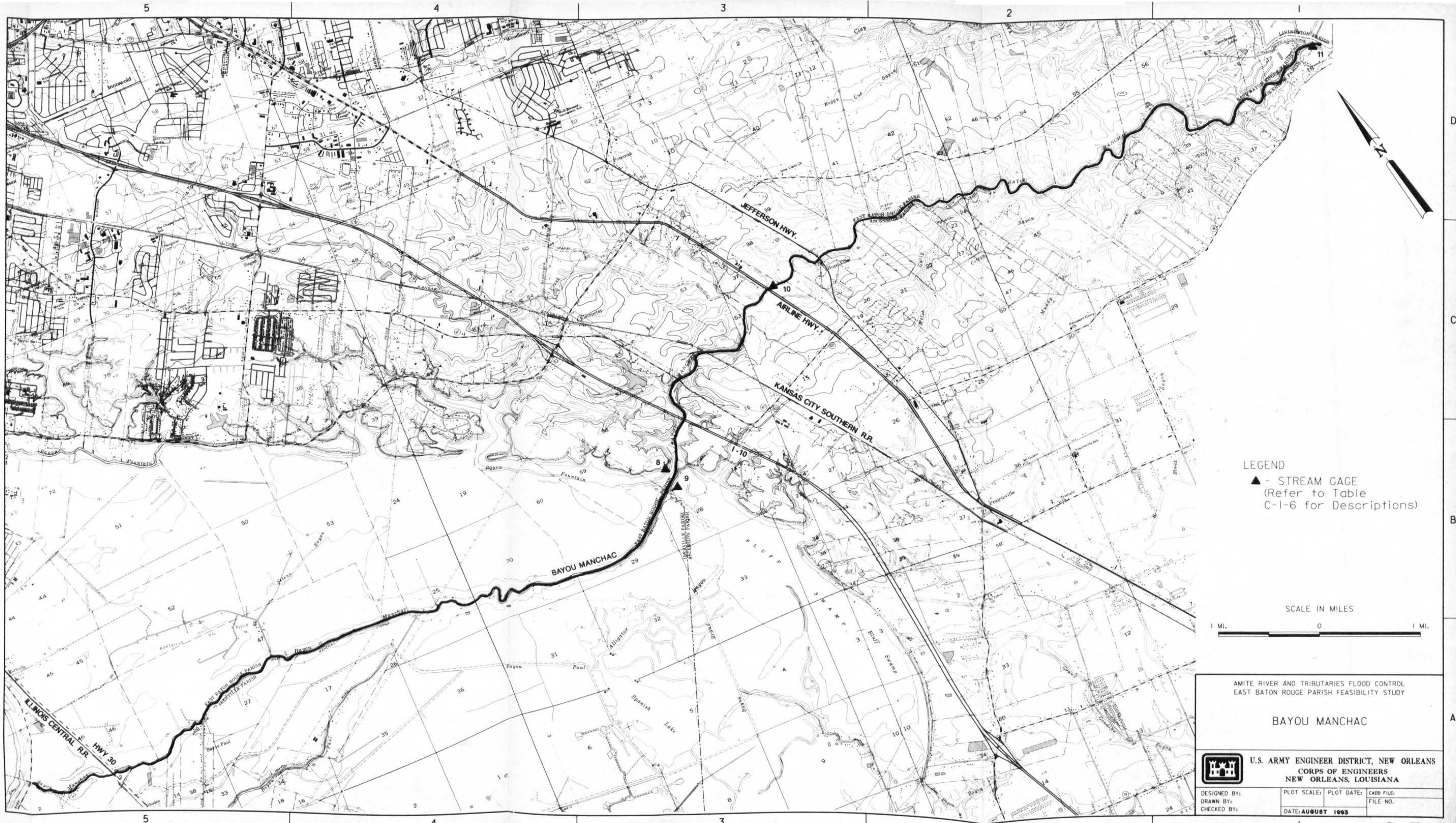
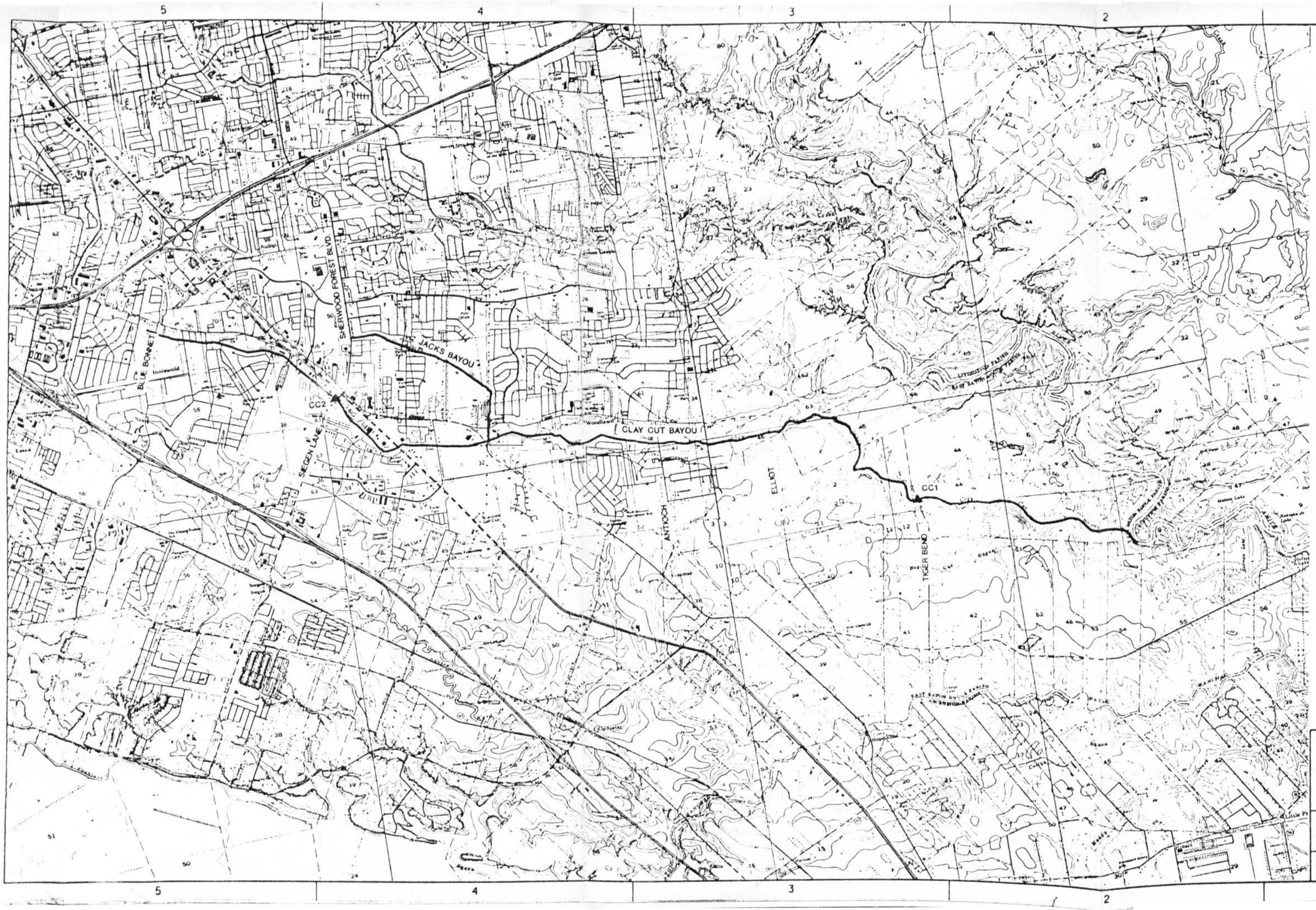

LEGEND
▲ - STREAM GAGE
(Refer to Table C-1-6 for Descriptions)
SCALE IN MILES
1 MI. 0 1 MI.
BAYOU MANCHAC
JEFFERSON HWY.
AIRLINE HWY.
KANSAS CITY SOUTHERN R.R.
I-10
ILLINOIS CENTRAL R.R.
HWY 30
LIVINGSTON PARISH
EAST BATON ROUGE PARISH
ASCENSION PARISH
IBERVILLE PARISH
Spanish Lake
Bayou Fountain
Alligator Bayou
Bayou Paul
Bluff Swamp
Prairieville
Inniswold
AMITE RIVER AND TRIBUTARIES FLOOD CONTROL
EAST BATON ROUGE PARISH FEASIBILITY STUDY
BAYOU MANCHAC
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA
DESIGNED BY:
DRAWN BY:
CHECKED BY:
PLOT SCALE:
PLOT DATE:
CADD FILE:
FILE NO.
DATE: AUGUST 1993

PLATE C-2

LA HWY. 42
NORTH BRANCH
GOURRIER AVE.
SOUTH BRANCH
BF1
HIGHLAND ROAD
BENHUR RD
BURBANK DRIVE
CLEAR & SNAG
CONCRETE U-CHANNEL
50' BW
BF2
GARDERE LANE
50' BW, 1V ON 3H
SIEGEN LANE
BF3
BAYOU FOUNTAIN
CLEAR & SNAG
ILLINOIS CENTRAL R.R.
60" SEWERLINE
(UNDER CONSTRUCTION)
HWY 30
ELBOW BAYOU
DUNCAN POINT
MISSISSIPPI RIVER
MANCHAC POINT
EAST BATON ROUGE PARISH
WEST BATON ROUGE PARISH
IBERVILLE PARISH
LEGEND
▲ - STREAM GAGE
(Refer to Table
C-1-7 for Descriptions)
Recommened Plan is
Described Along
Stream Reaches
SCALE IN MILES
1 MI. 0 1 MI.
AMITE RIVER AND TRIBUTARIES FLOOD CONTROL
EAST BATON ROUGE PARISH FEASIBILITY STUDY
BAYOU FOUNTAIN
AND TRIBUTARIES
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA
DESIGNED BY:
DRAWN BY:
CHECKED BY:
PLOT SCALE:
PLOT DATE:
FILE NO.
DATE: AUGUST 1993

PLATE C-3

FLORIDA BLVD.
BATON ROUGE
GOVERNMENT ST.
WC4
CLAYCUT RD.
BROUSSARD ST.
WC3
NORTH
FLORIDA
GOODWOOD BLVD.
NB2
BRANCH
WARD
CREEK
OLD HAMMOND HWY.
NB1
I-12
STANFORD
DAWSON CREEK
LEE DR.
MOSS LANE SIDE
WARD CREEK
CONCRETE LINE
32' BW
1V ON 3H
WC2
BD1
BAYOU DUPLANIER
CLEAR & SNAG
KENILWORTH
ESSEN LANE
PERKINS RD.
BLUE BONNET
DC2
DC1
CLEAR & SNAG
I-10
SIEGEN LANE
WC1
OLD CHANNEL (REMOVED)
NEW RELOCATED CHANNEL
KANSAS CITY SOUTHERN R.R.
BATON ROUGE
PECUE LANE
CLEAR & SNAG
BARRINGER FOREMAN
LEGEND
▲ - STREAM GAGE (Refer to Table C-1-7 for Descriptions)
Recommened Plan is Described Along Stream Reaches
SCALE IN MILES
1 MI.
0
1 MI.
N
AMITE RIVER AND TRIBUTARIES FLOOD CONTROL
EAST BATON ROUGE PARISH FEASIBILITY STUDY
WARD CREEK
AND TRIBUTARIES
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS



LEGEND

▲ - STREAM GAGE
(Refer to Table
C-1-7 for Descriptions)

SCALE IN MILES

1 MI. 0 1 MI.

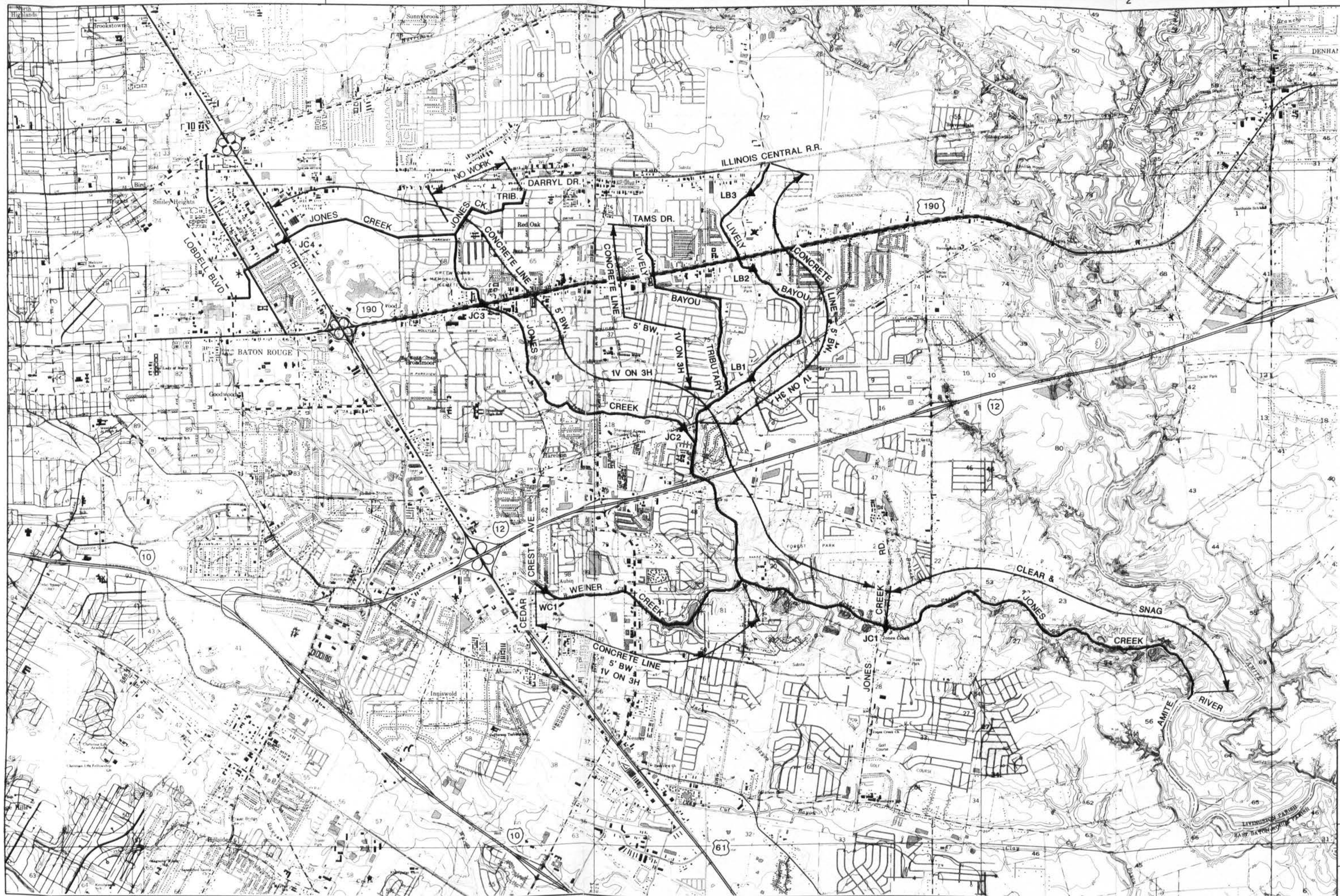
AMITE RIVER AND TRIBUTARIES FLOOD CONTROL
EAST BATON ROUGE PARISH FEASIBILITY STUDY

CLAY CUT BAYOU
AND TRIBUTARY

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: DRAWN BY: CHECKED BY:	PLOT SCALE:	PLOT DATE:	CADD FILE:
	DATE: AUGUST 1993		FILE NO.

PLATE C-5



LEGEND

▲ - STREAM GAGE (Refer to Table C-1-7 for Descriptions)

Recommened Plan is Described Along Stream Reaches

SCALE IN MILES

1 MI. 0 1 MI.

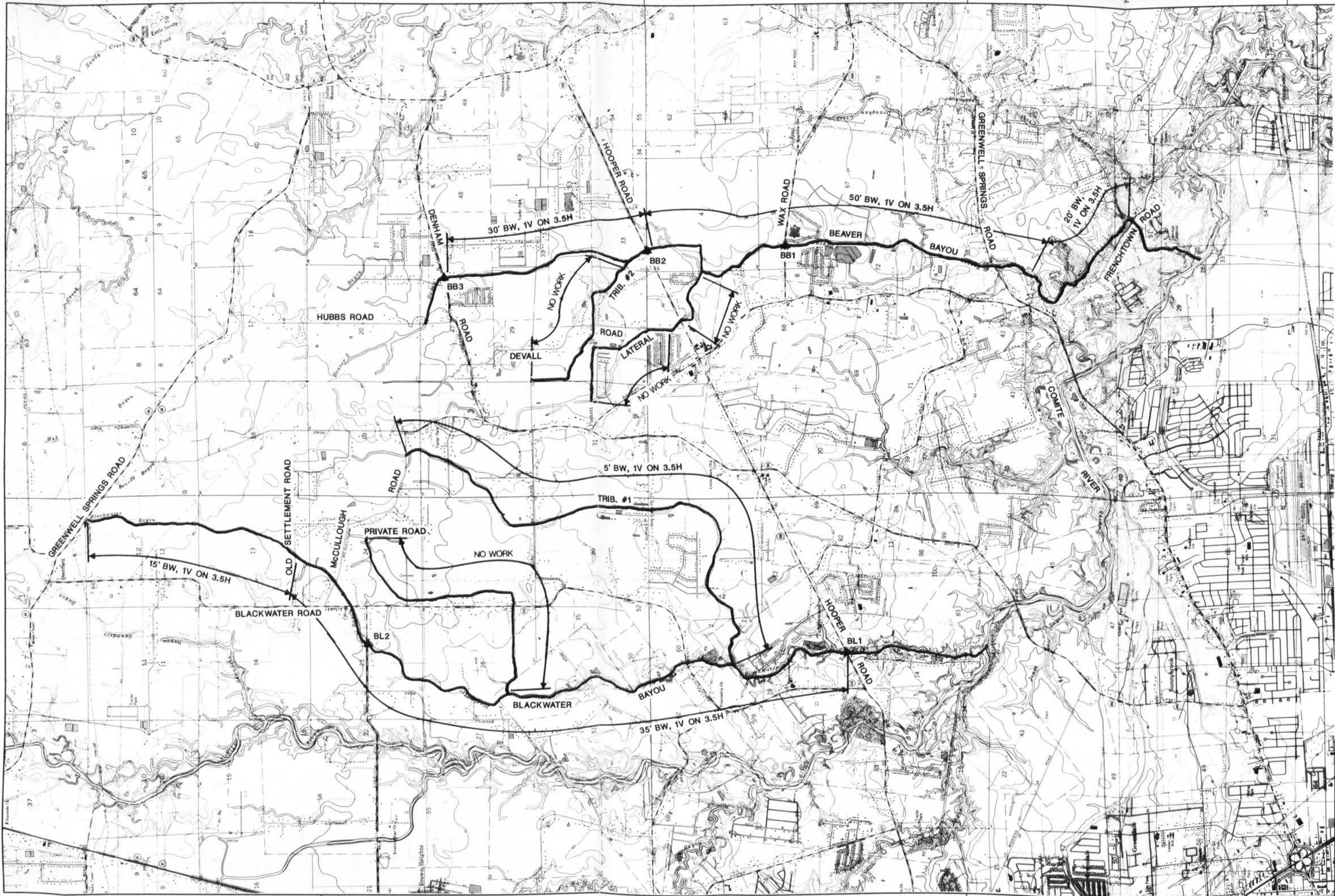
AMITE RIVER AND TRIBUTARIES FLOOD CONTROL
EAST BATON ROUGE PARISH FEASIBILITY STUDY

JONES CREEK
AND TRIBUTARIES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: FV	PLOT SCALE: AS SHOWN	PLOT DATE: N/A	CADD FILE: N/A
DRAWN BY: LMP			FILE NO.
CHECKED BY: FV	DATE: SEPTEMBER 1994		H-4-40273

PLATE C-6



LEGEND
▲ - STREAM GAGE
(Refer to Table C-I-7 for Descriptions)

Recommened Plan is Described Along Stream Reaches

SCALE IN MILES

1 MI. 0 1 MI.

AMITE RIVER AND TRIBUTARIES FLOOD CONTROL
EAST BATON ROUGE PARISH FEASIBILITY STUDY

BLACKWATER BAYOU,
BEAVER BAYOU
AND TRIBUTARIES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: FV	PLOT SCALE: AS SHOWN	PLOT DATE: N/A	CADD FILE: N/A
DRAWN BY: LMP	DATE: SEPTEMBER 1994		FILE NO. H-4-40273
CHECKED BY: FV			

LEGEND

▲ - STREAM GAGE
(Refer to Table C-1-7 for Descriptions)

SCALE IN MILES

1 MI. 0 1 MI.

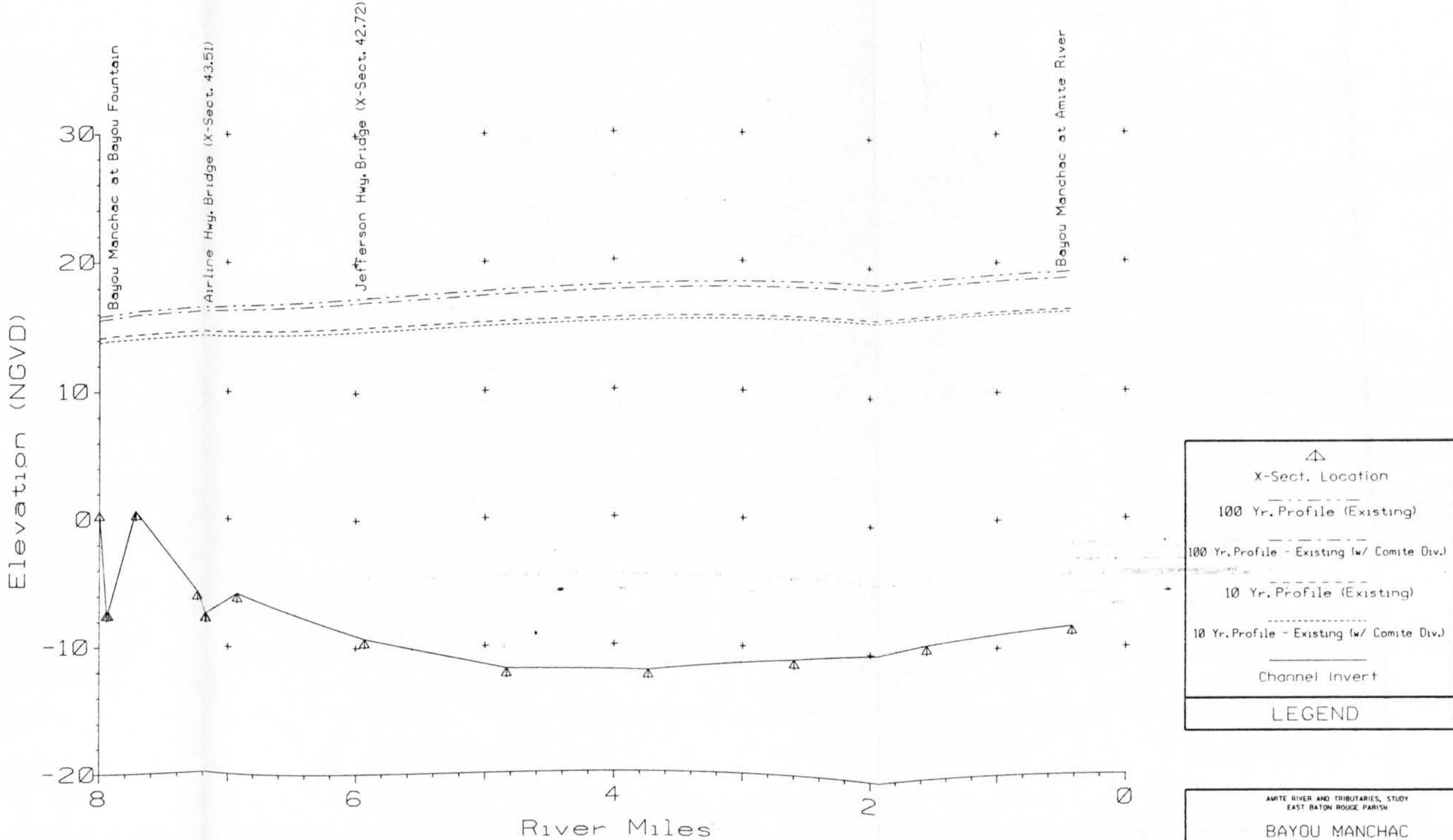
AMITE RIVER AND TRIBUTARIES FLOOD CONTROL
EAST BATON ROUGE PARISH FEASIBILITY STUDY

HURRICANE CREEK
AND TRIBUTARY

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY:			FILE NO.
CHECKED BY:	DATE: AUGUST 1993		

PLATE C-8



NOTE: Bayou Manchac is under the influence of reverse flow.

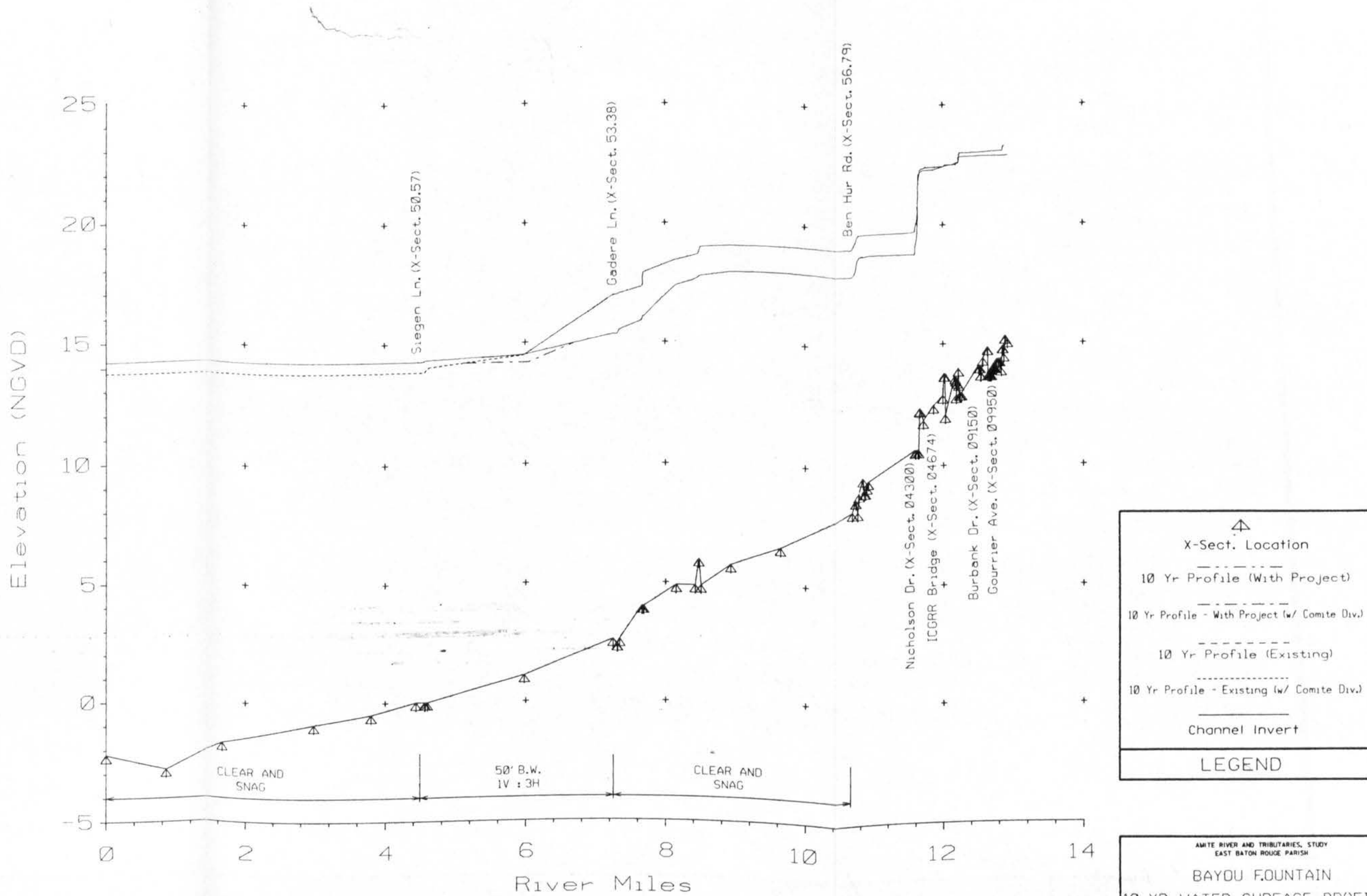
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU MANCHAC
EXISTING WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

PLATE C-9



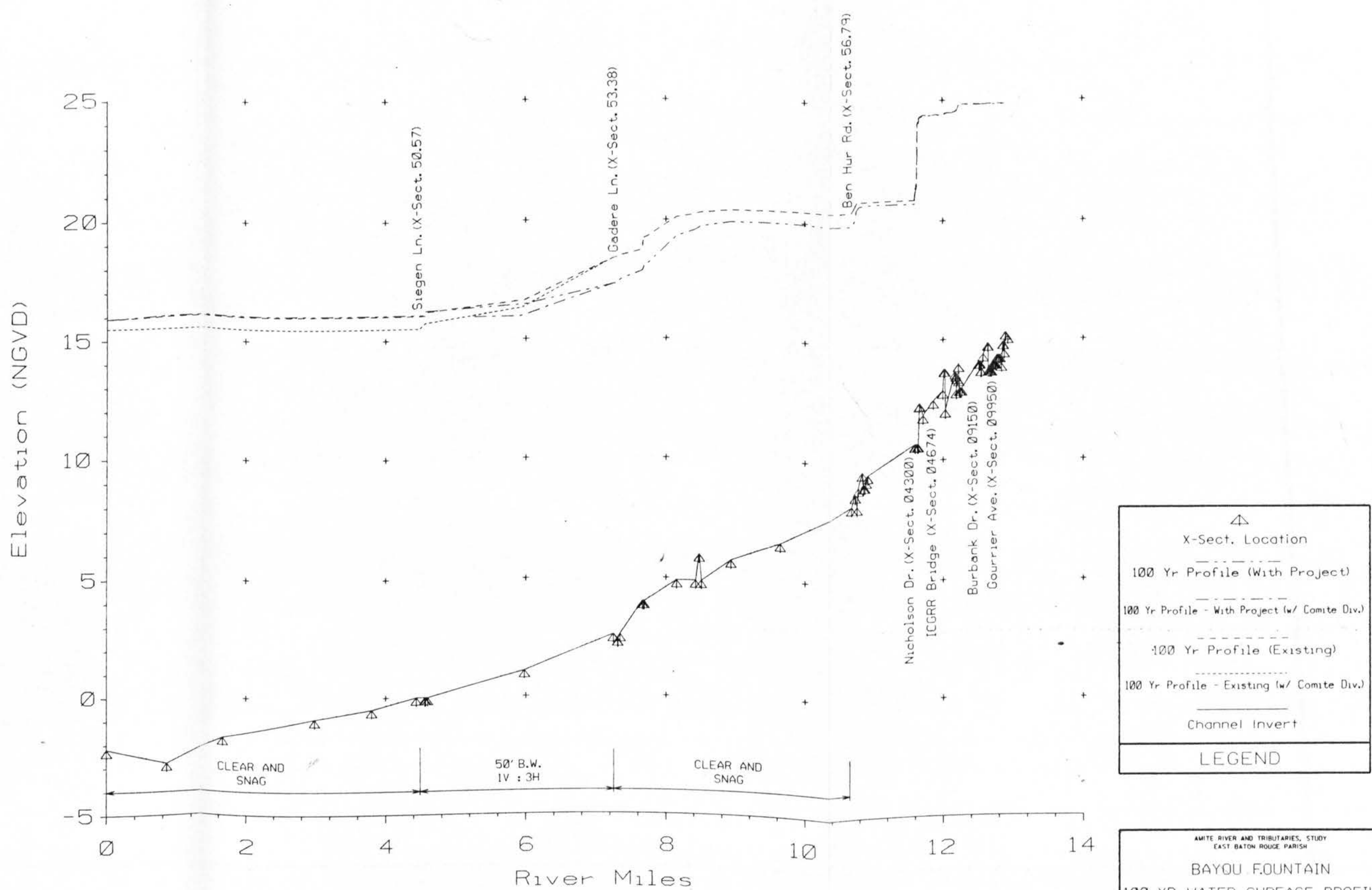
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN
10-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB DRAWN BY: CJB CHECKED BY: CES	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
	DATE: AUGUST 1993		FILE NO. H-4-40273

PLATE C-10

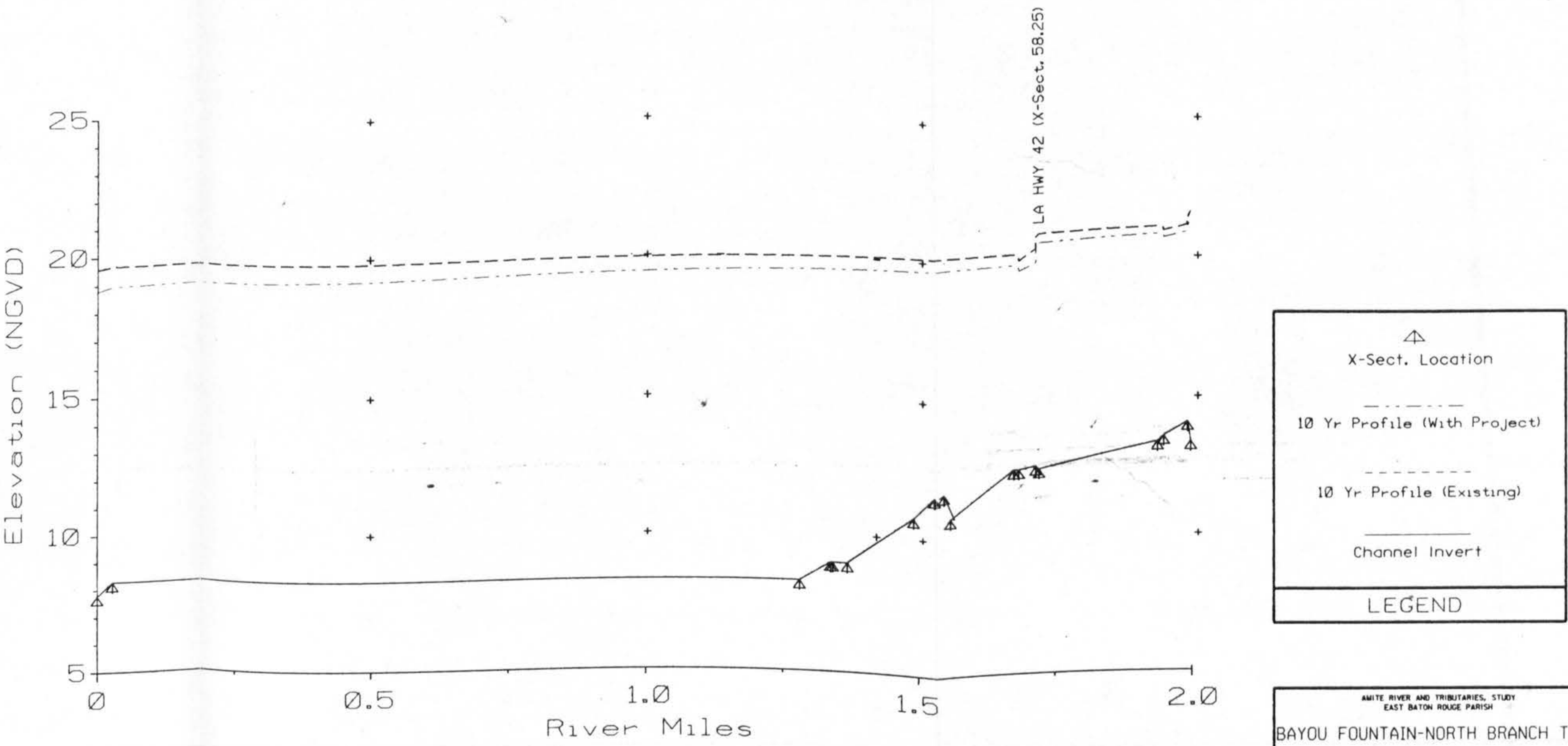


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN
100-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB			FILE NO. H-4-40273	
CHECKED BY: CES	DATE: AUGUST 1993			

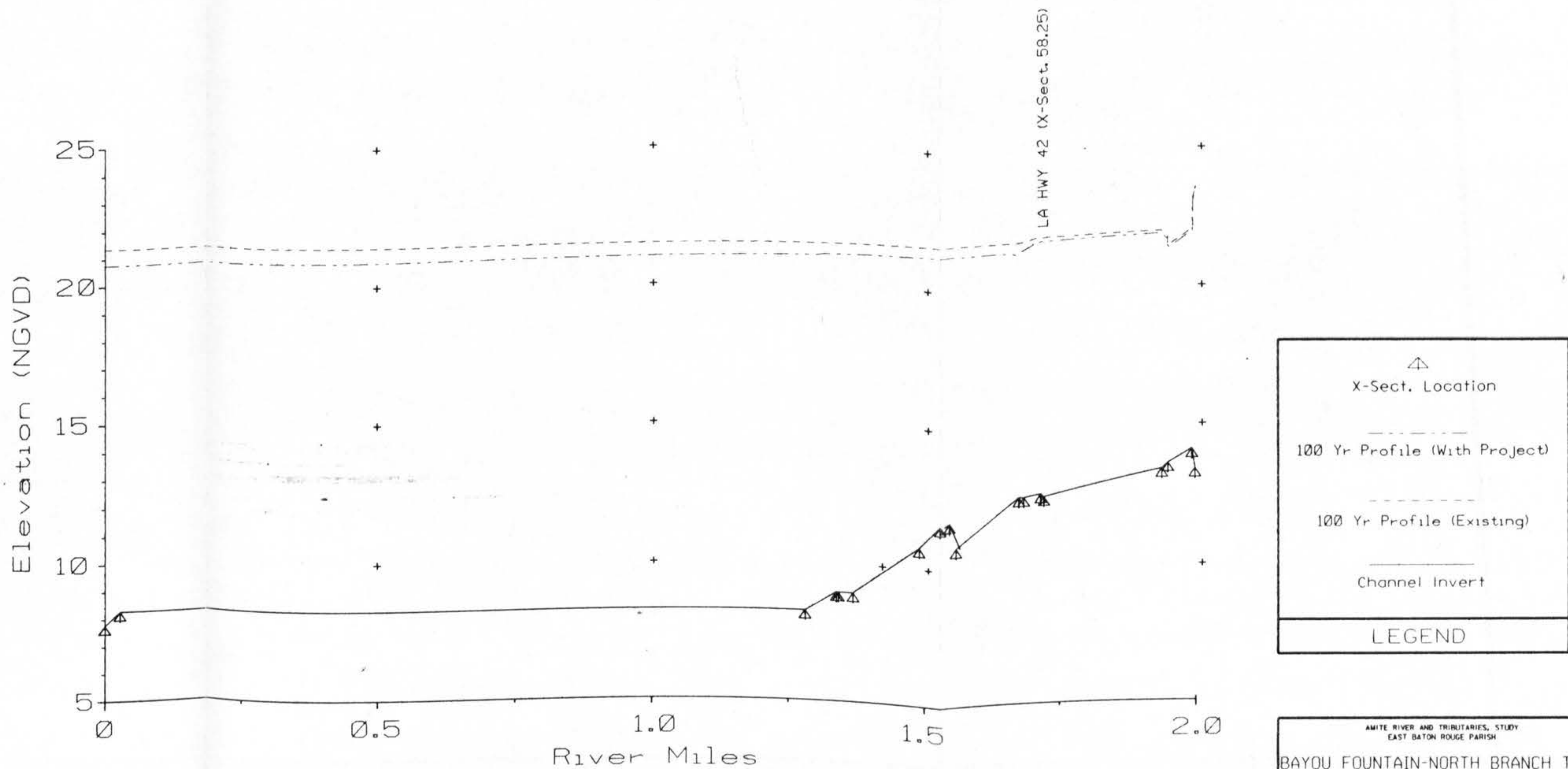


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN-NORTH BRANCH TRIB.
10-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		



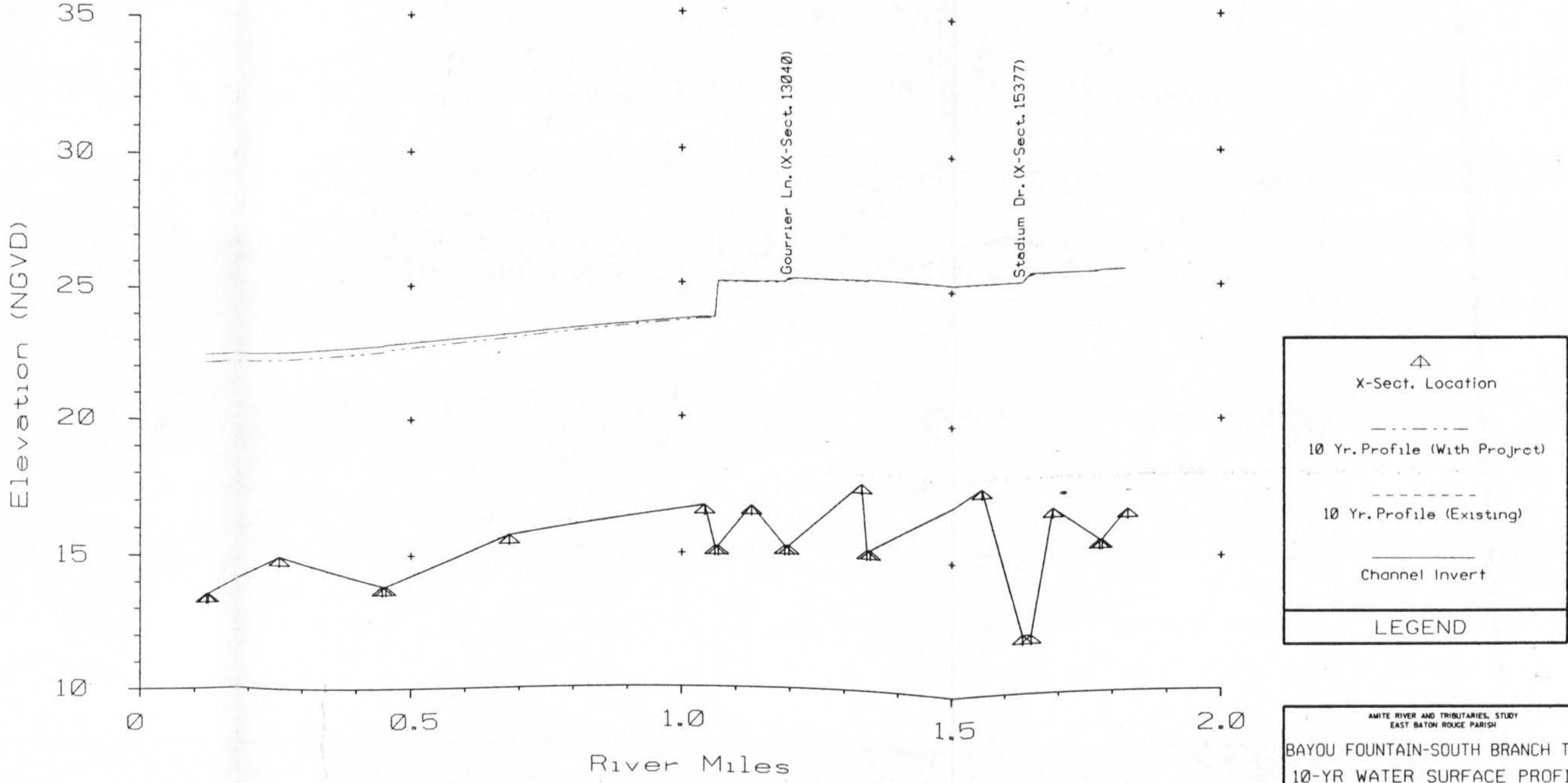
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN-NORTH BRANCH TRIB.

100-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		



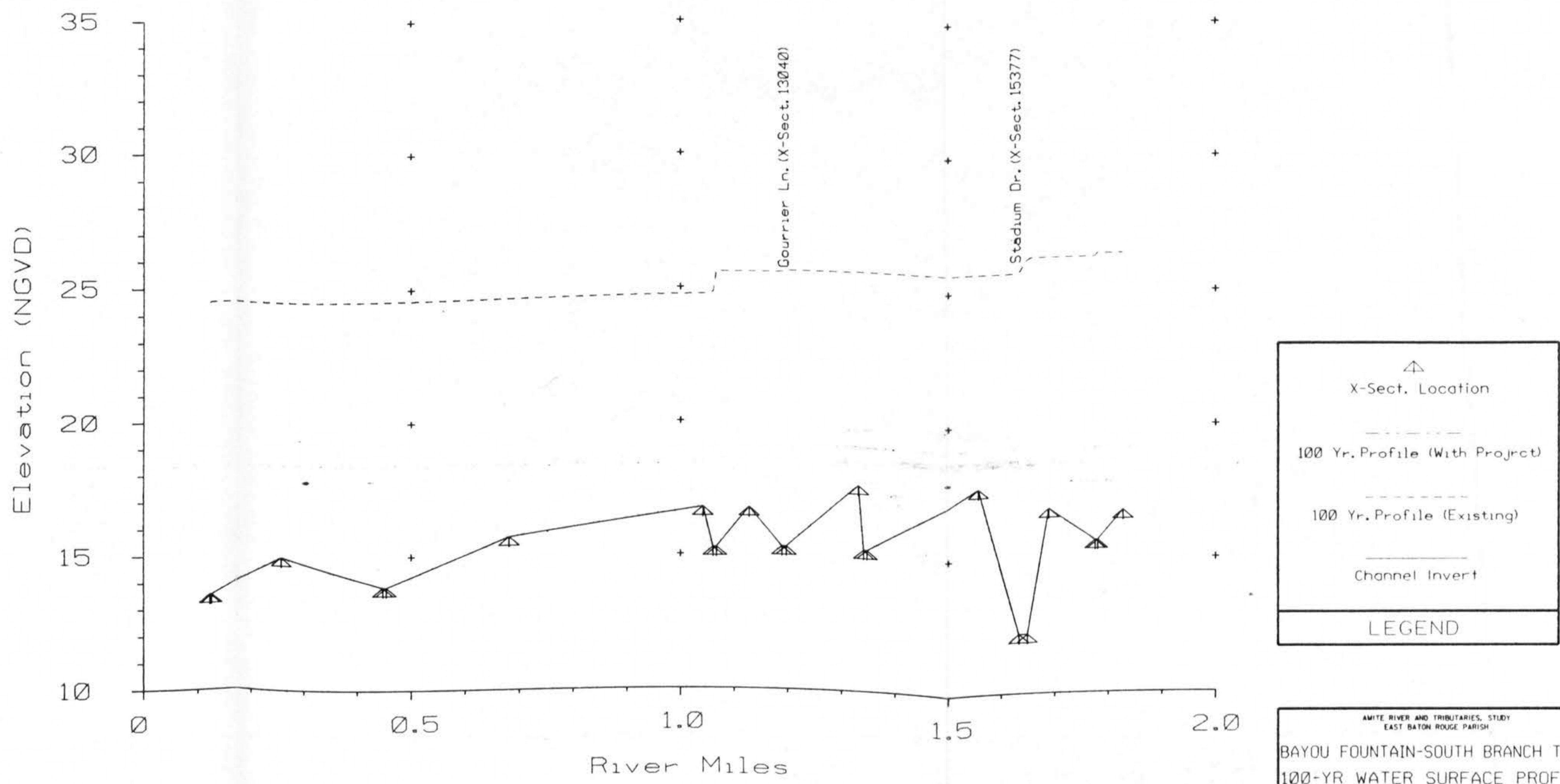
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN-SOUTH BRANCH TRIB.
10-YR WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB DRAWN BY: CJB CHECKED BY: CES	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
	DATE: AUGUST 1993		FILE NO. H-4-40273

PLATE C-14



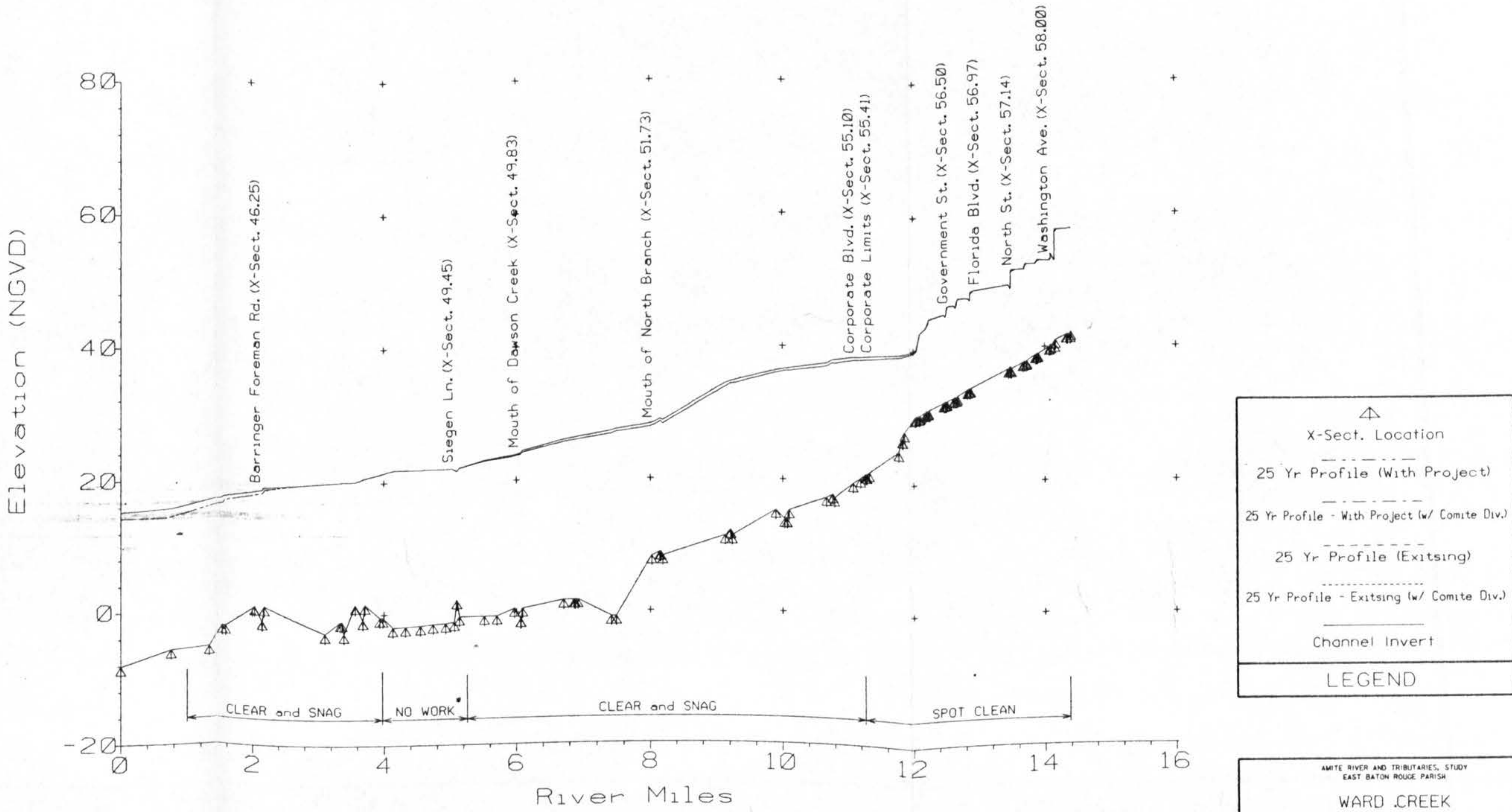
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN-SOUTH BRANCH TRIB.
1ØØ-YR WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB DRAWN BY: CJB CHECKED BY: CES	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
	DATE: AUGUST 1993		FILE NO. H-4-40273

PLATE C-15



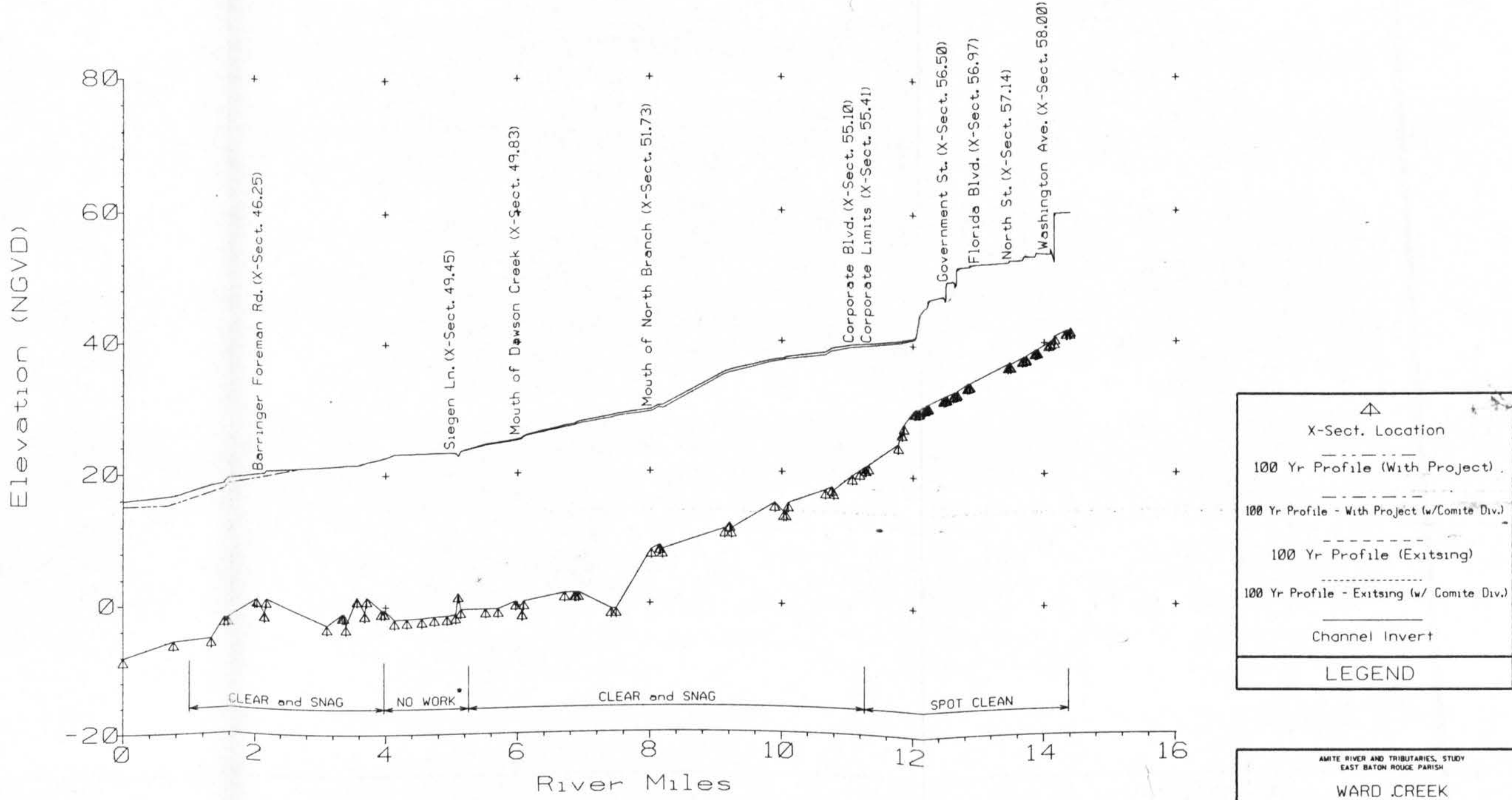
*Local developer has already realigned and improved the channel to 4 :1 side slopes with a 150' bottom width.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK
25-YR WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB DRAWN BY: CJB CHECKED BY: CES	PLOT SCALE: NONE PLOT DATE: DATE: AUGUST 1993	CADD FILE: FILE NO. H-4-40273



*Local developer has already realigned and improved the channnel to 4 :1 side slopes with a 150' bottom width.

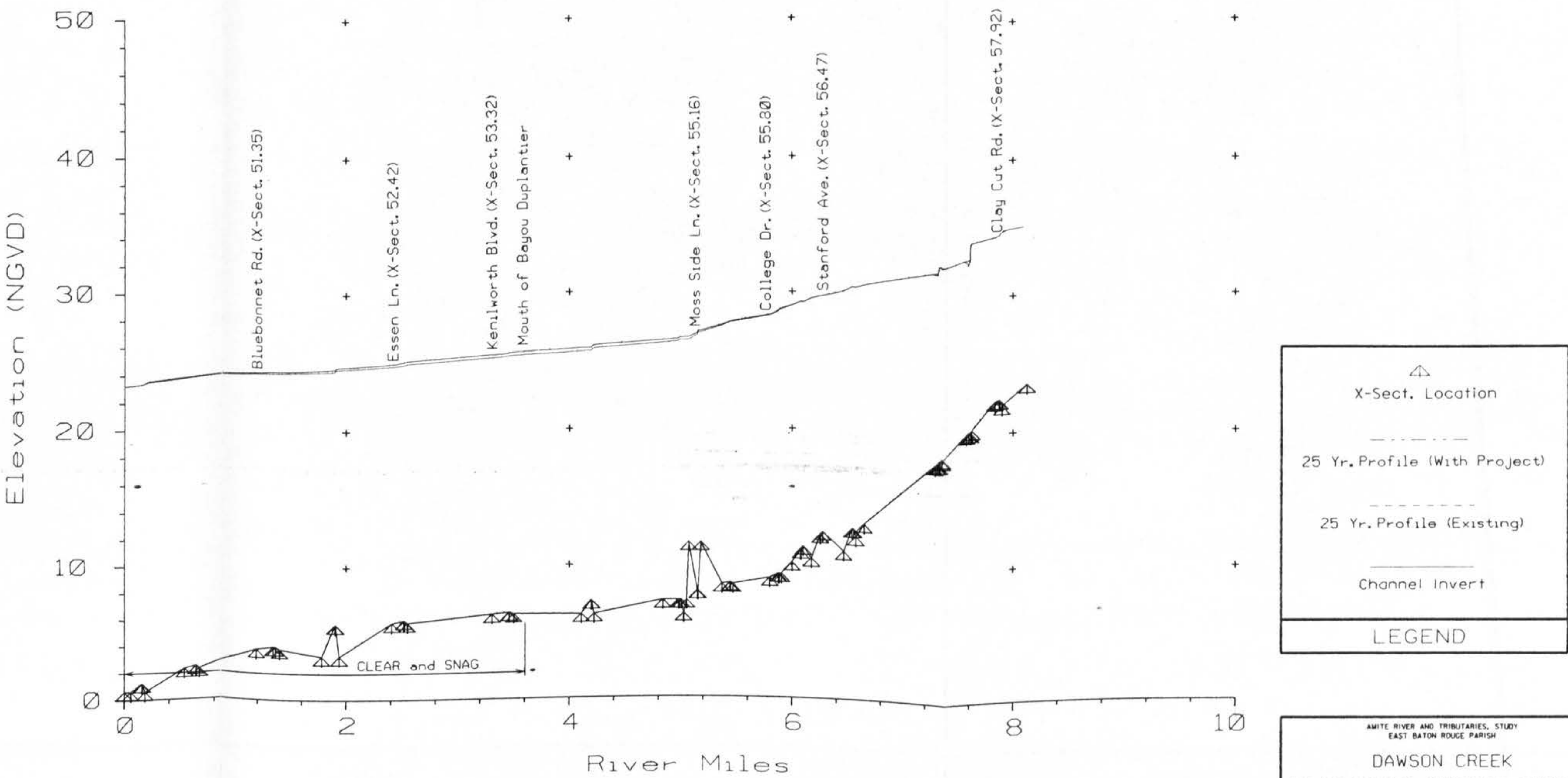
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK
100-YR WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

PLATE C-17



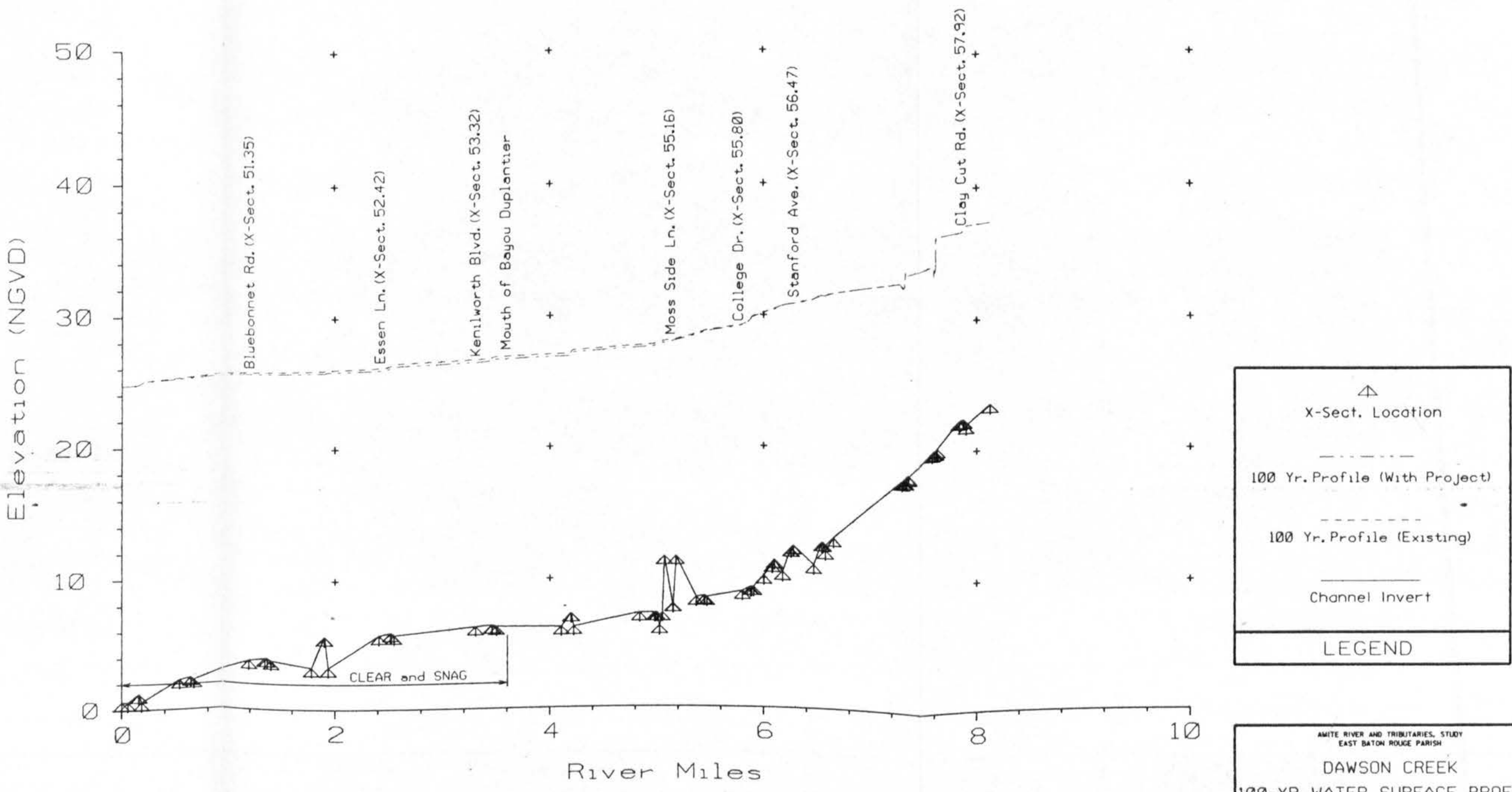
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

DAWSON CREEK

25-YR. WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY: CJB	NONE		FILE NO.
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273

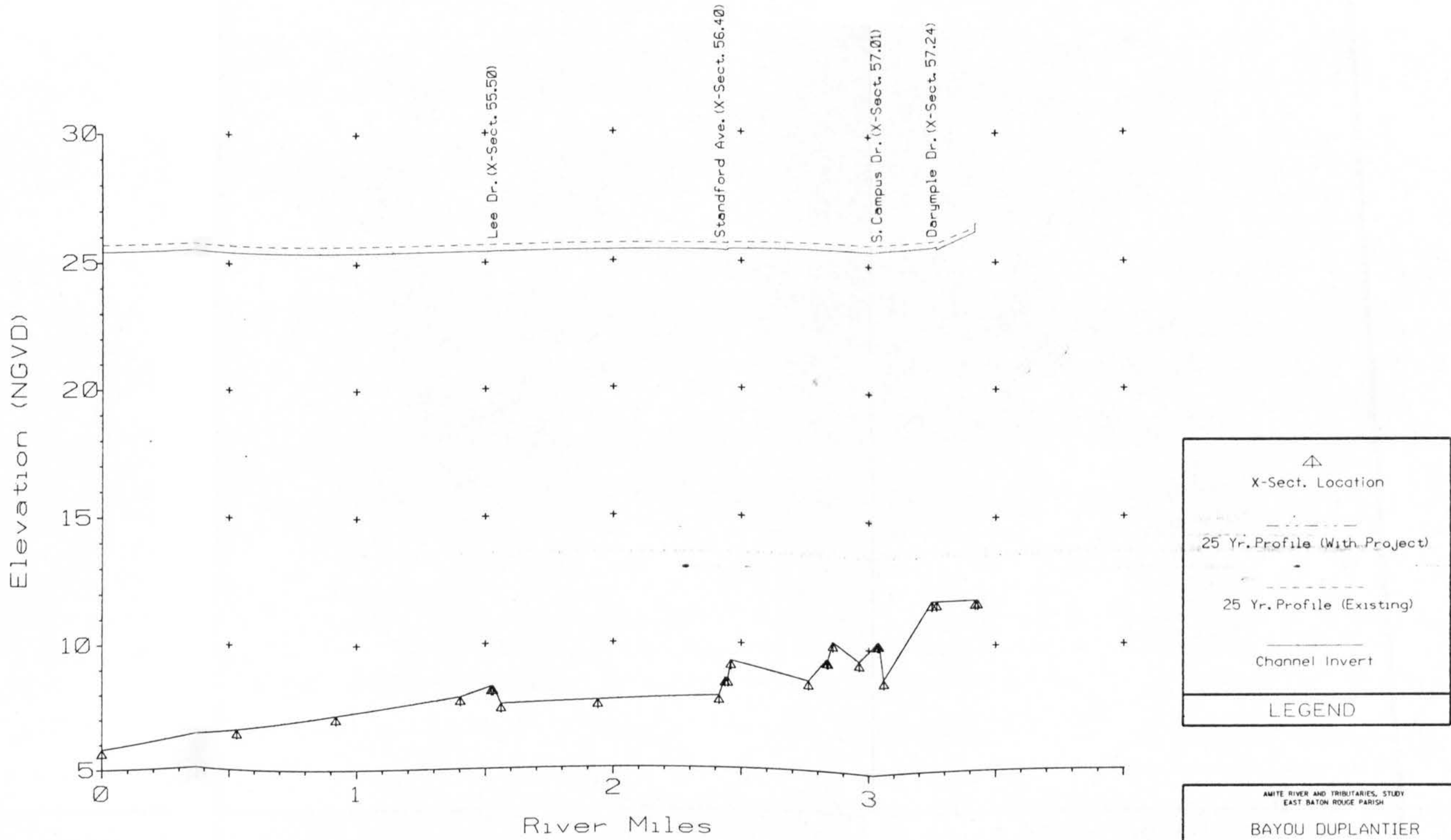


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

DAWSON CREEK
100-YR. WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		



AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU DUPLANTIER
25-YR. WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB			FILE NO. H-4-40273	
CHECKED BY: CES	DATE: AUGUST 1993			

PLATE C-20

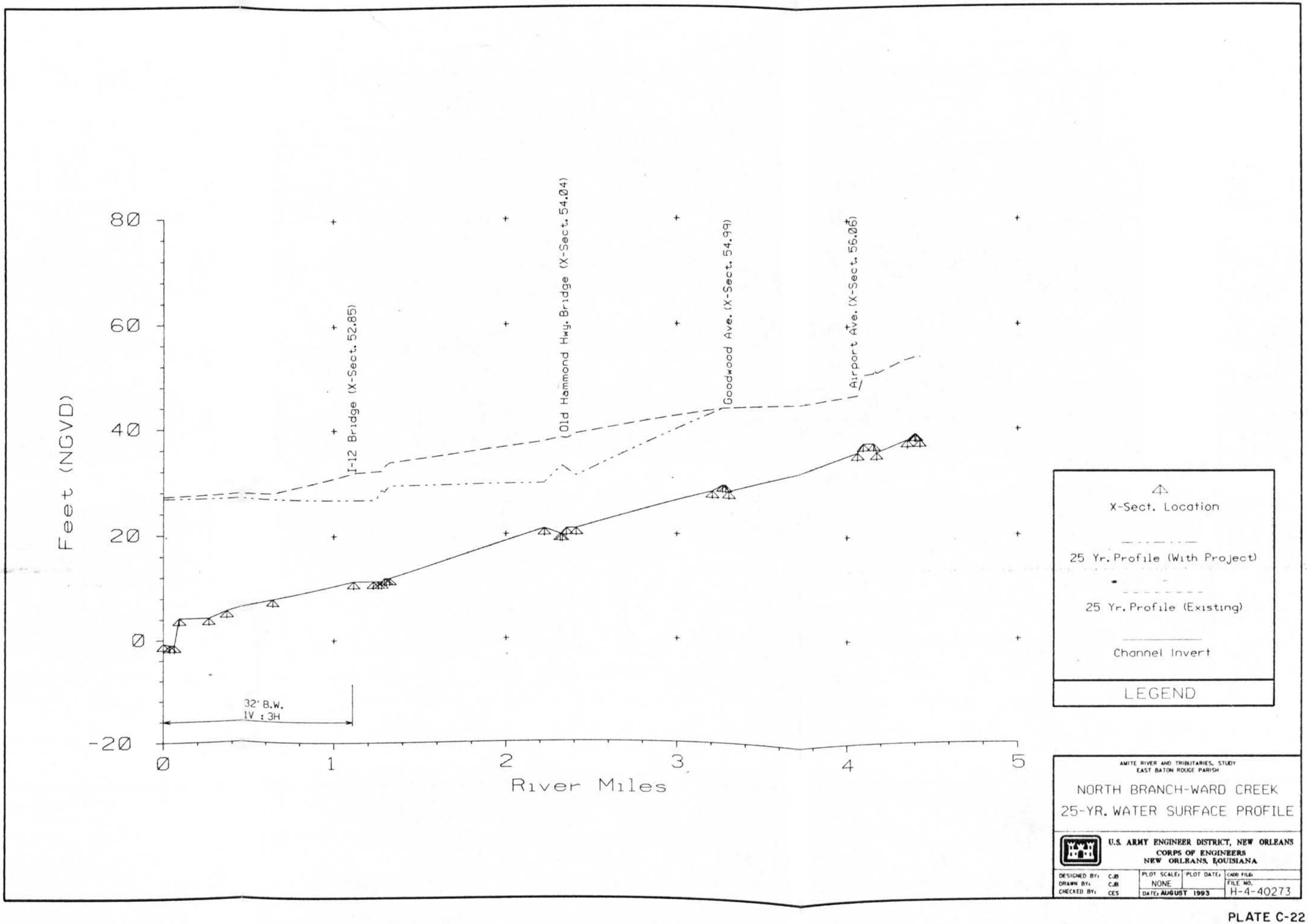
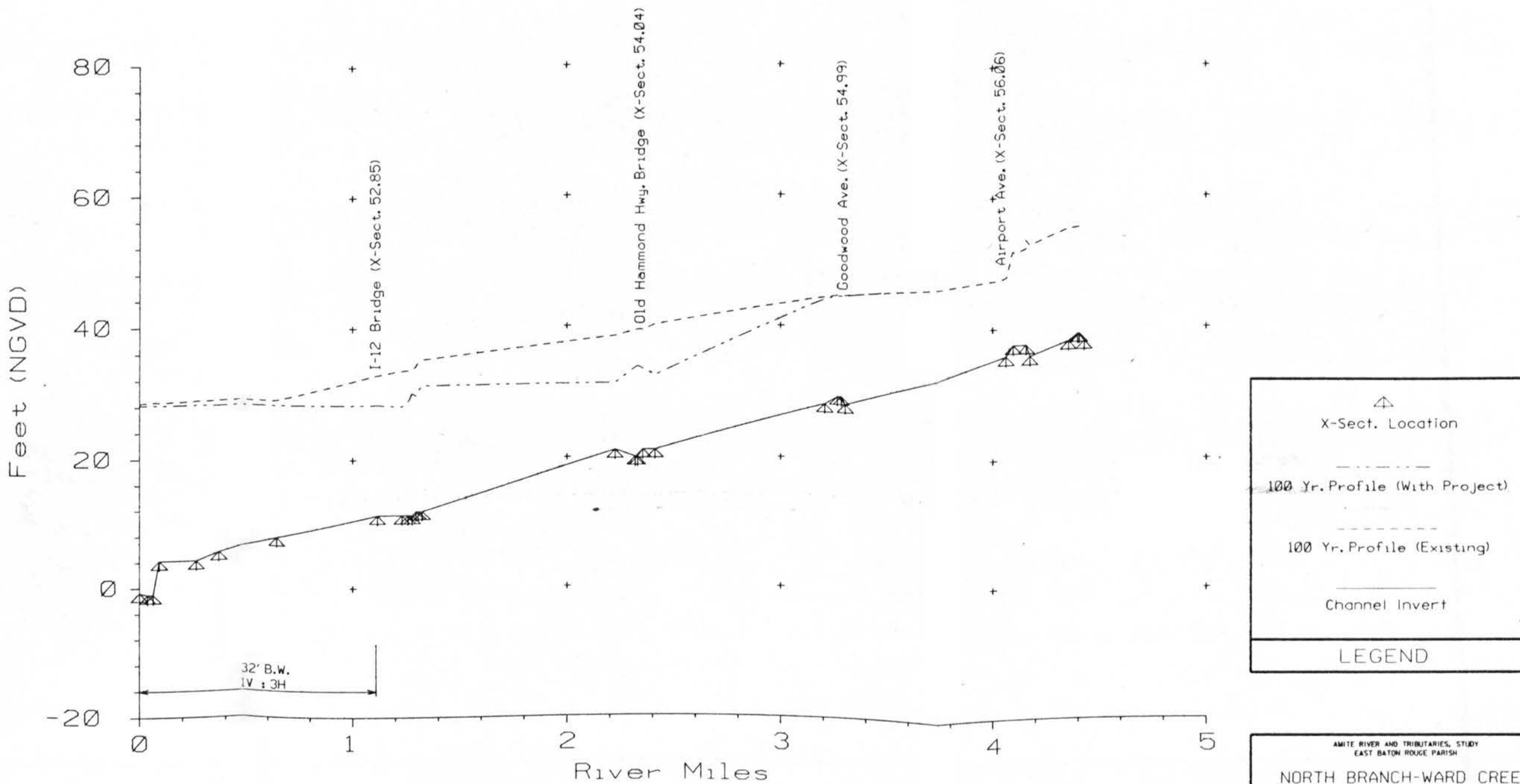

80
60
40
20
0
-20
Feet (NGVD)
I-12 Bridge (X-Sect. 52.85)
Old Hammond Hwy. Bridge (X-Sect. 54.04)
Goodwood Ave. (X-Sect. 54.99)
Airport Ave. (X-Sect. 56.06)
32' B.W.
1V : 3H
0
1
2
3
4
5
River Miles
X-Sect. Location
25 Yr. Profile (With Project)
25 Yr. Profile (Existing)
Channel Invert
LEGEND
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
NORTH BRANCH-WARD CREEK
25-YR. WATER SURFACE PROFILE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA
DESIGNED BY: CJB
DRAWN BY: CJB
CHECKED BY: CES
PLOT SCALE: NONE
PLOT DATE:
DATE: AUGUST 1993
CADD FILE:
FILE NO. H-4-40273

PLATE C-22

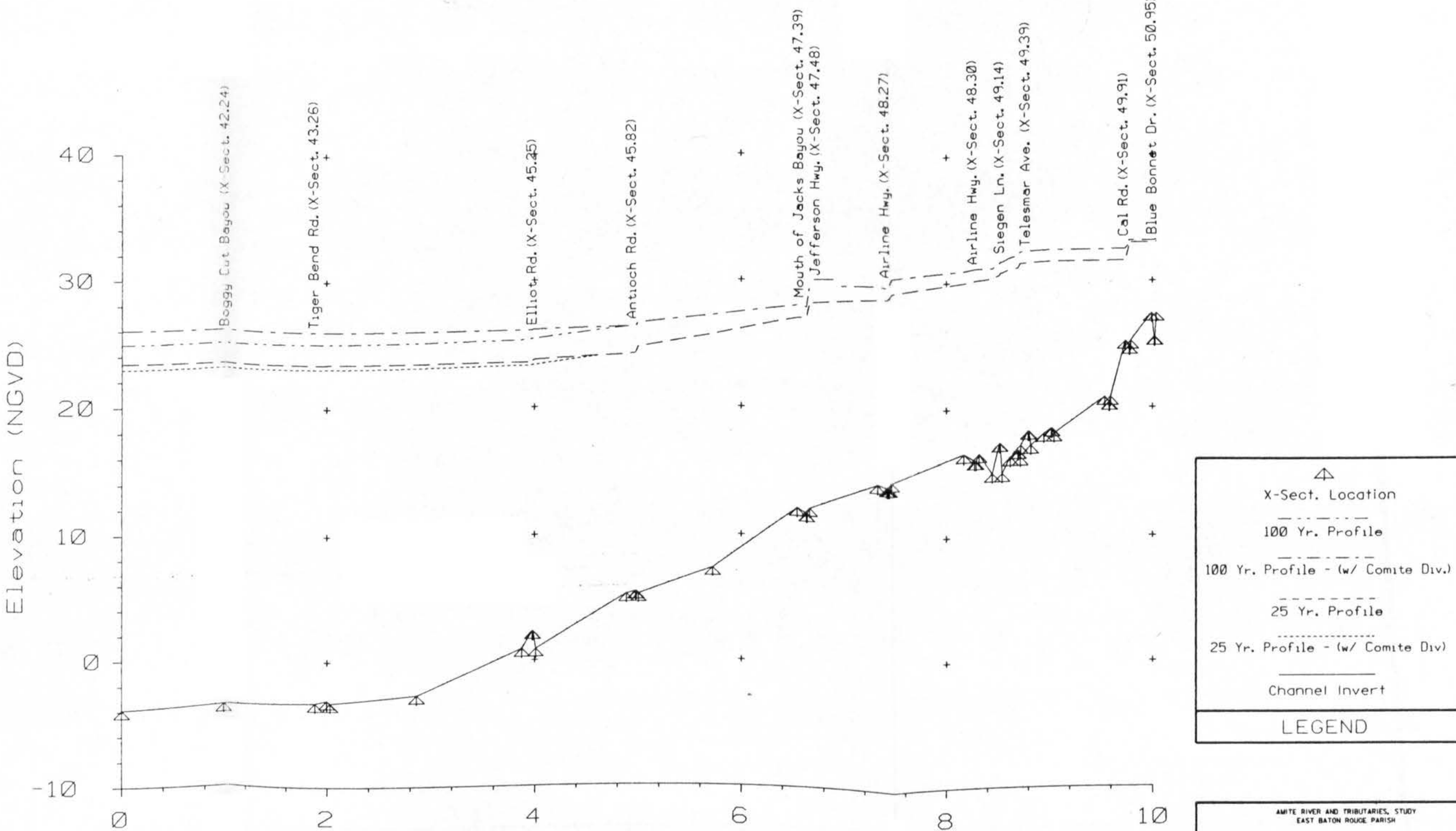


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

NORTH BRANCH-WARD CREEK
100-YR. WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		



AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

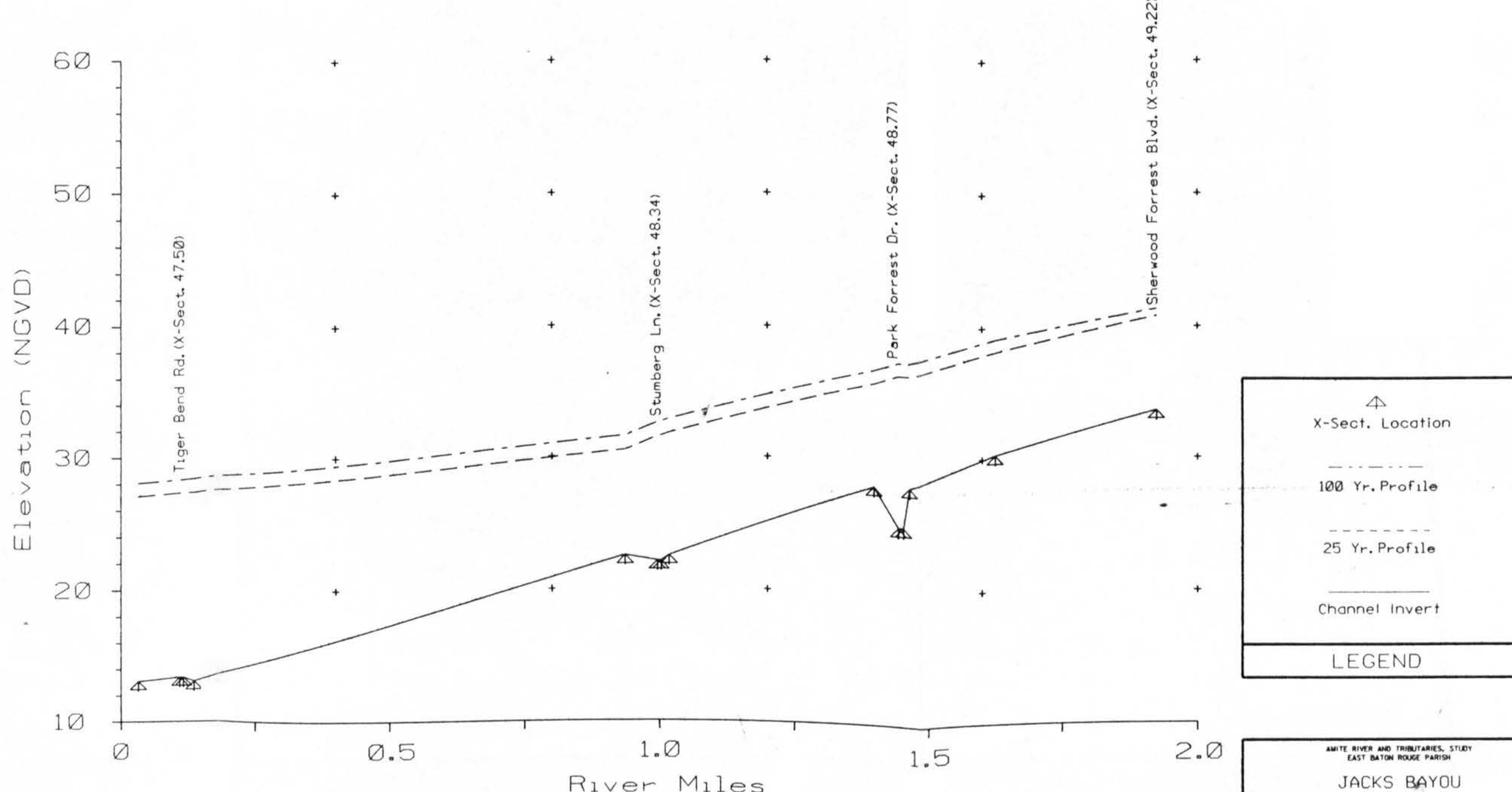
CLAYCUT BAYOU

EXISTING WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB			FILE NO. H-4-40273	
CHECKED BY: CES	DATE: AUGUST 1993			

PLATE C-24



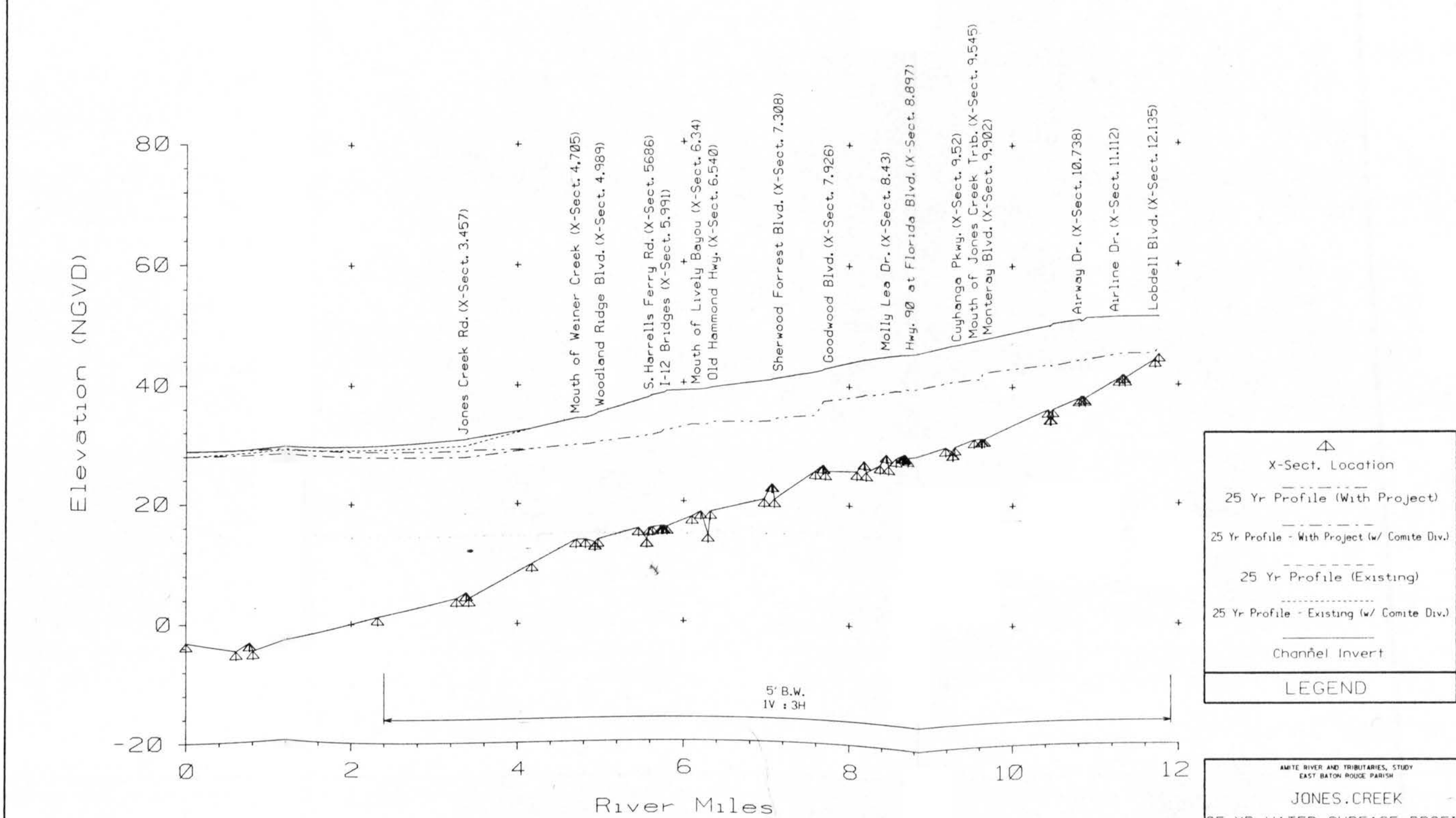
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JACKS BAYOU

EXISTING WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		



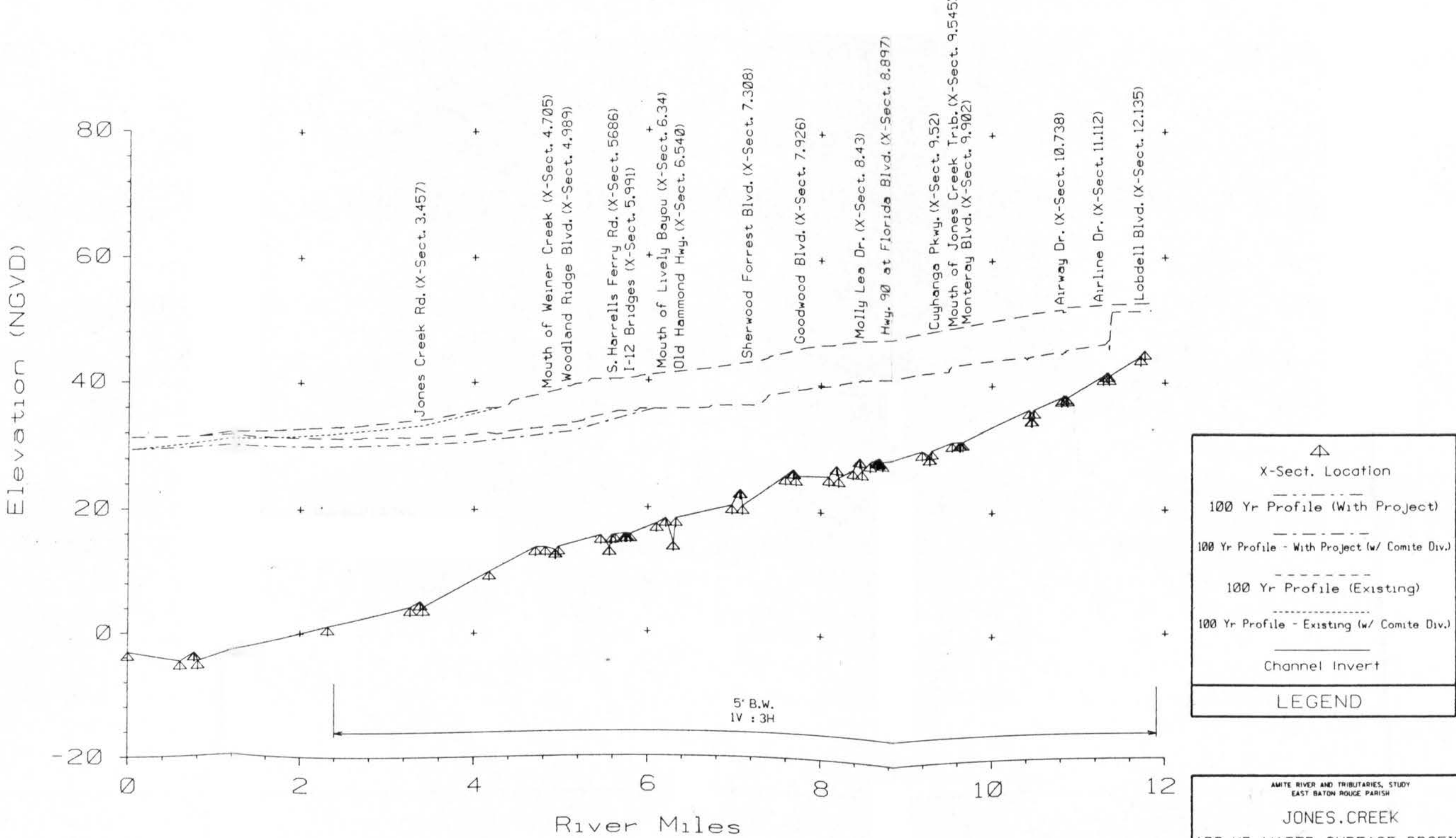
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES.CREEK

25-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		



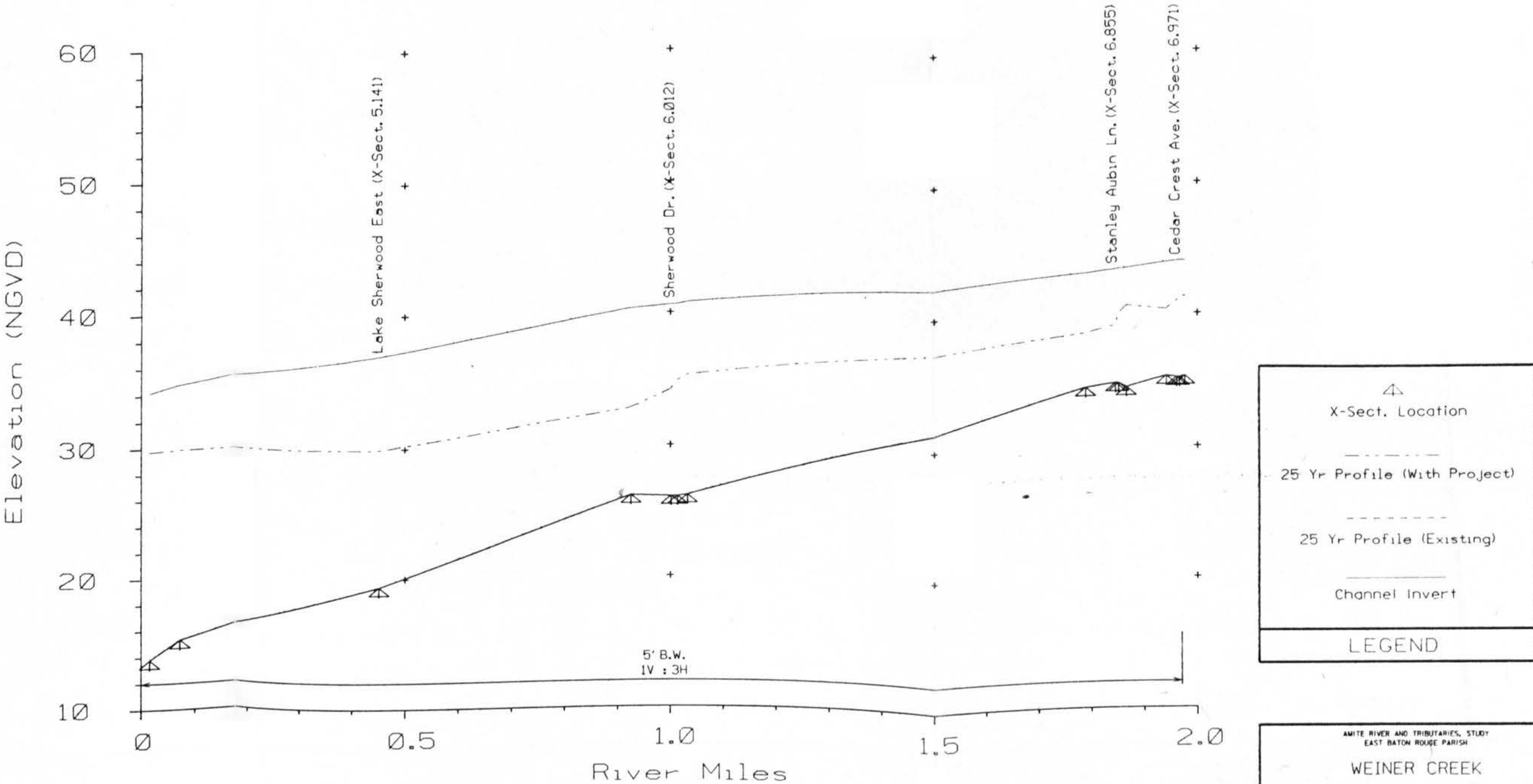
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES.CREEK

100-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

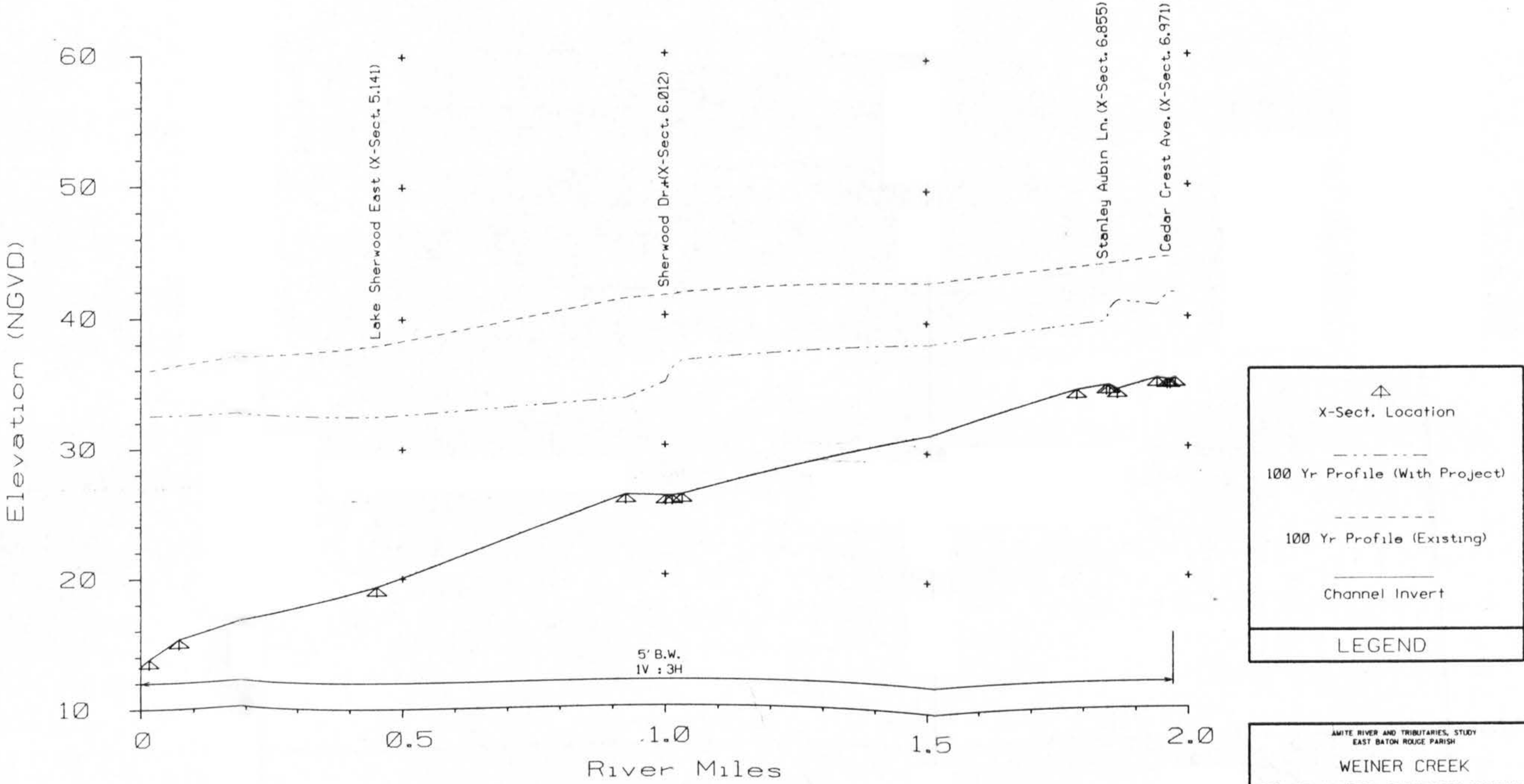


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WEINER CREEK
25-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY: CJB	NONE		FILE NO.
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273



AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

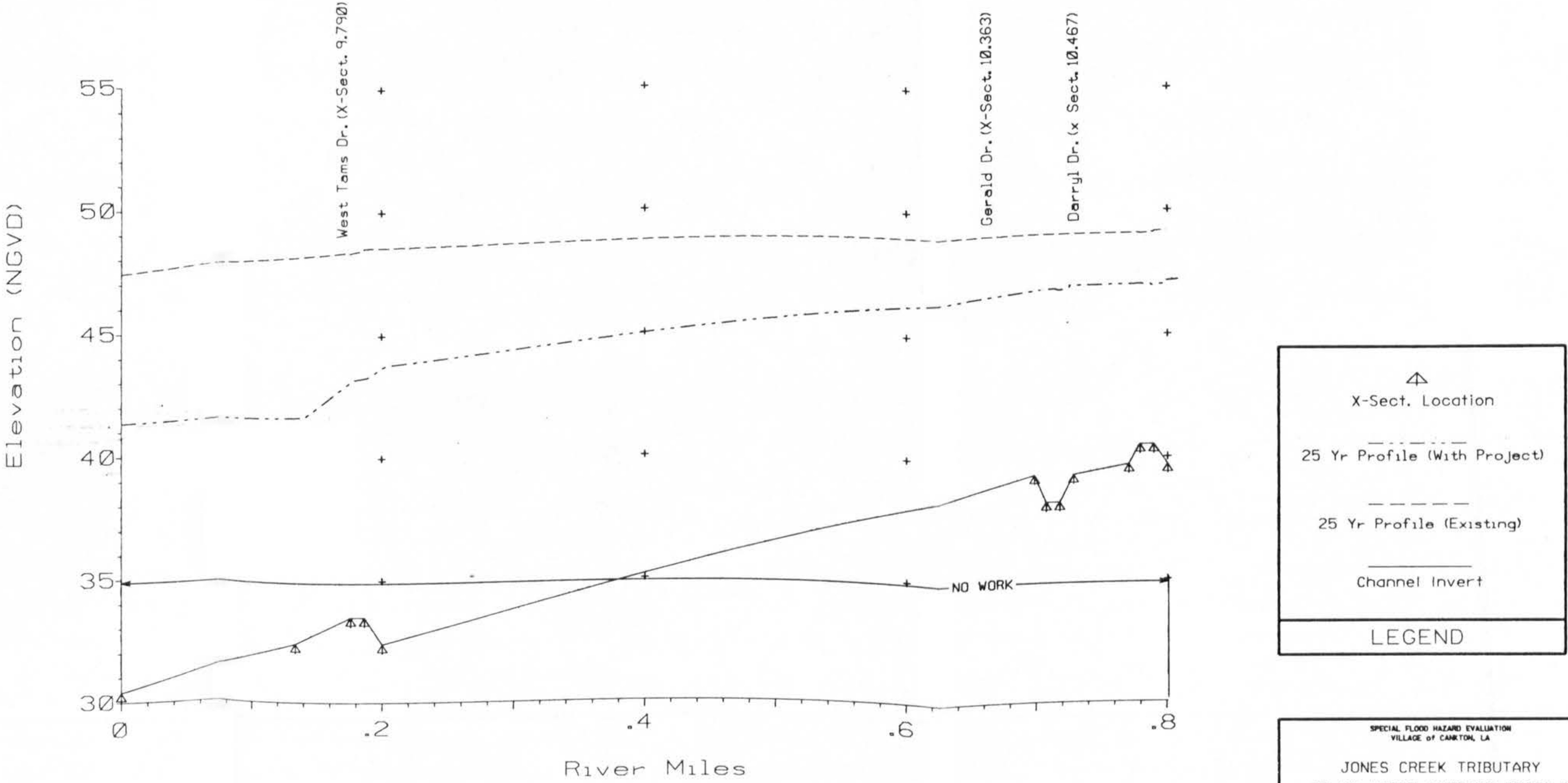
WEINER CREEK

100-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB DRAWN BY: CJB CHECKED BY: CES	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
	DATE: AUGUST 1993		FILE NO. H-4-40273

PLATE C-29

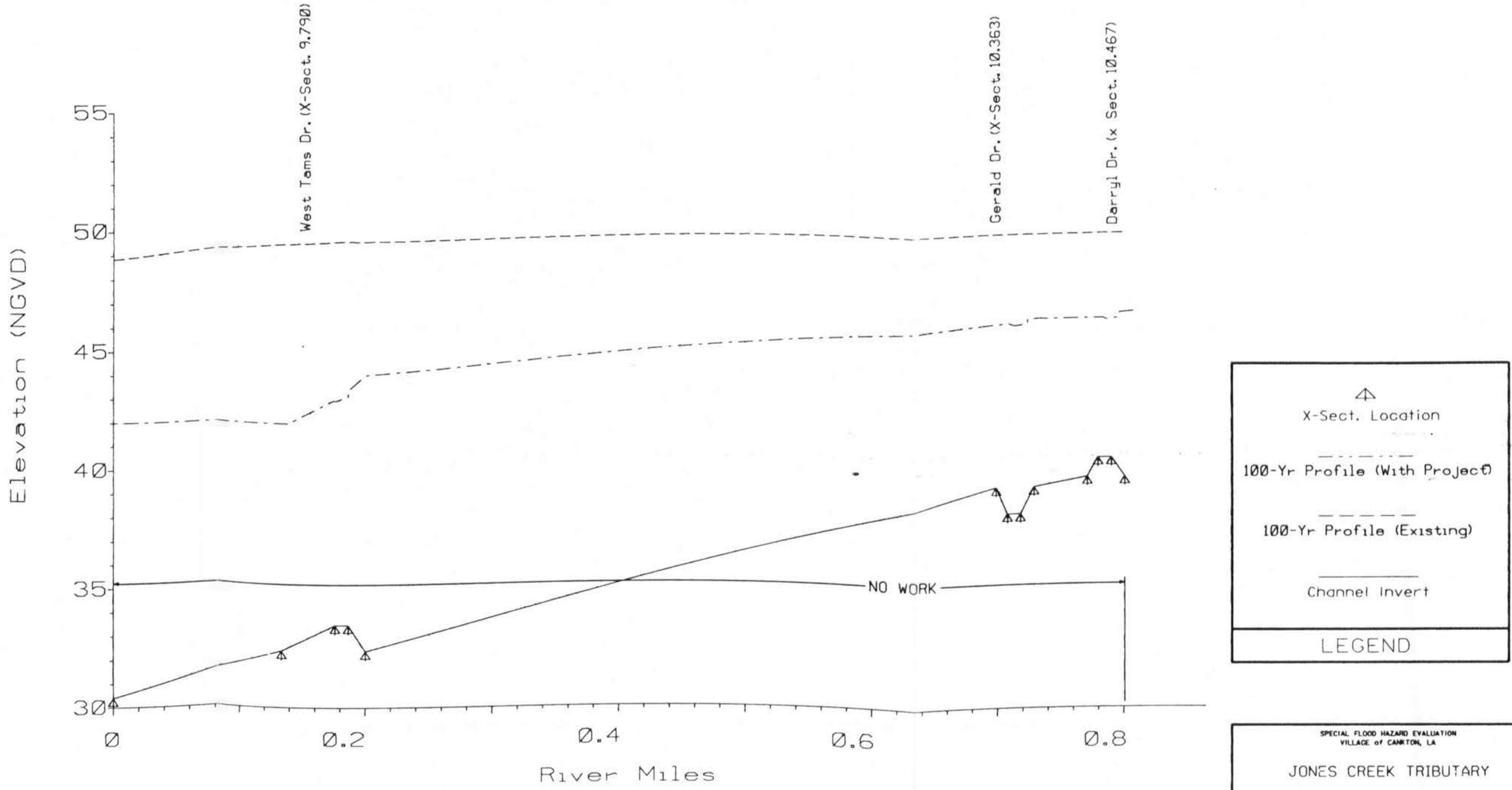


SPECIAL FLOOD HAZARD EVALUATION
VILLAGE of CANKTON, LA

JONES CREEK TRIBUTARY
25-YR WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO.
CHECKED BY: CES	DATE: OCT. '93		H-4-40273



SPECIAL FLOOD HAZARD EVALUATION
VILLAGE of CANKTON, LA

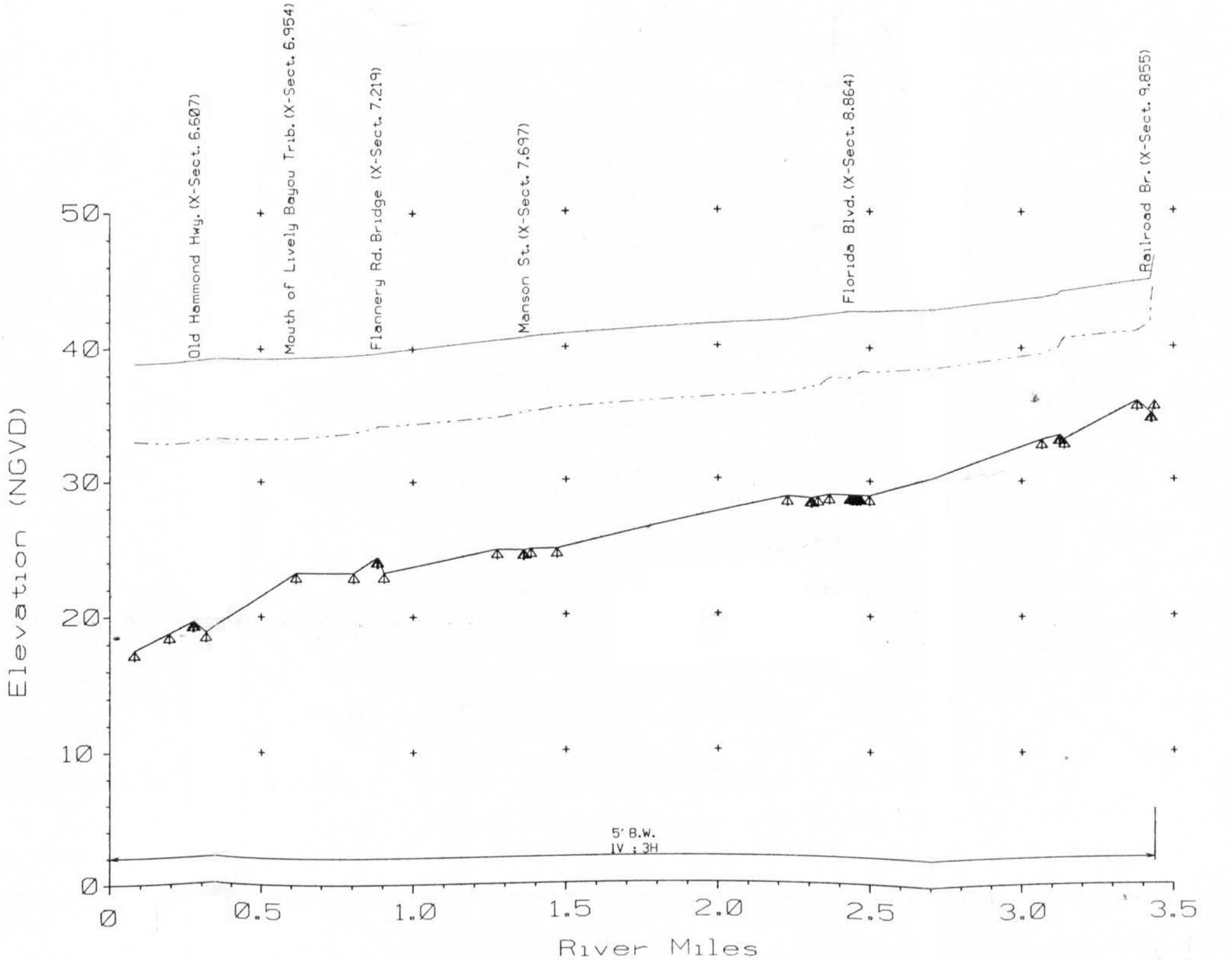
JONES CREEK TRIBUTARY

100-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO.
CHECKED BY: CES	DATE: OCT. '93		H-4-40273

Plate C-31

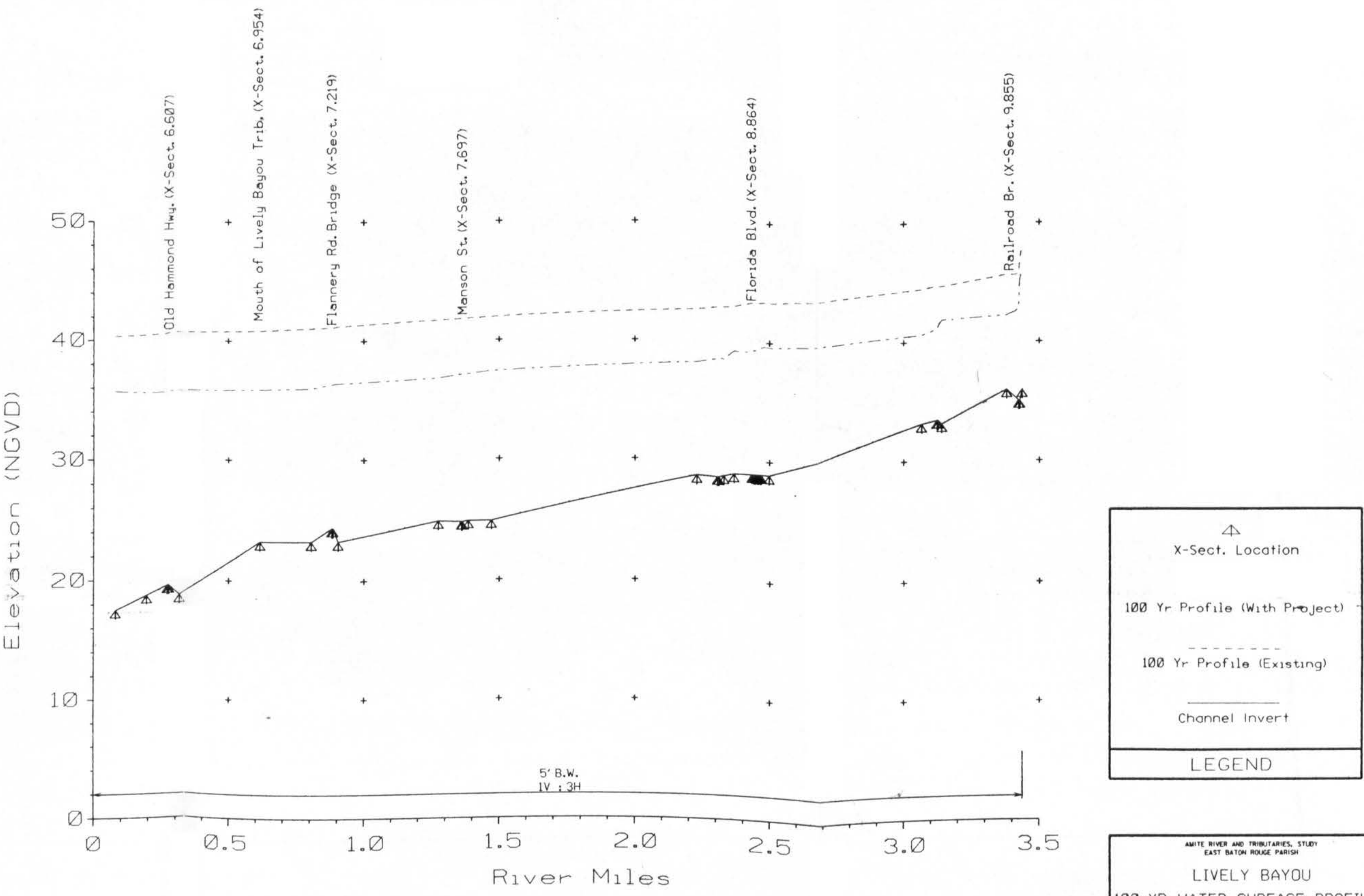


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

LIVELY BAYOU
25-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB			FILE NO. H-4-40273	
CHECKED BY: CES	DATE: AUGUST 1993			

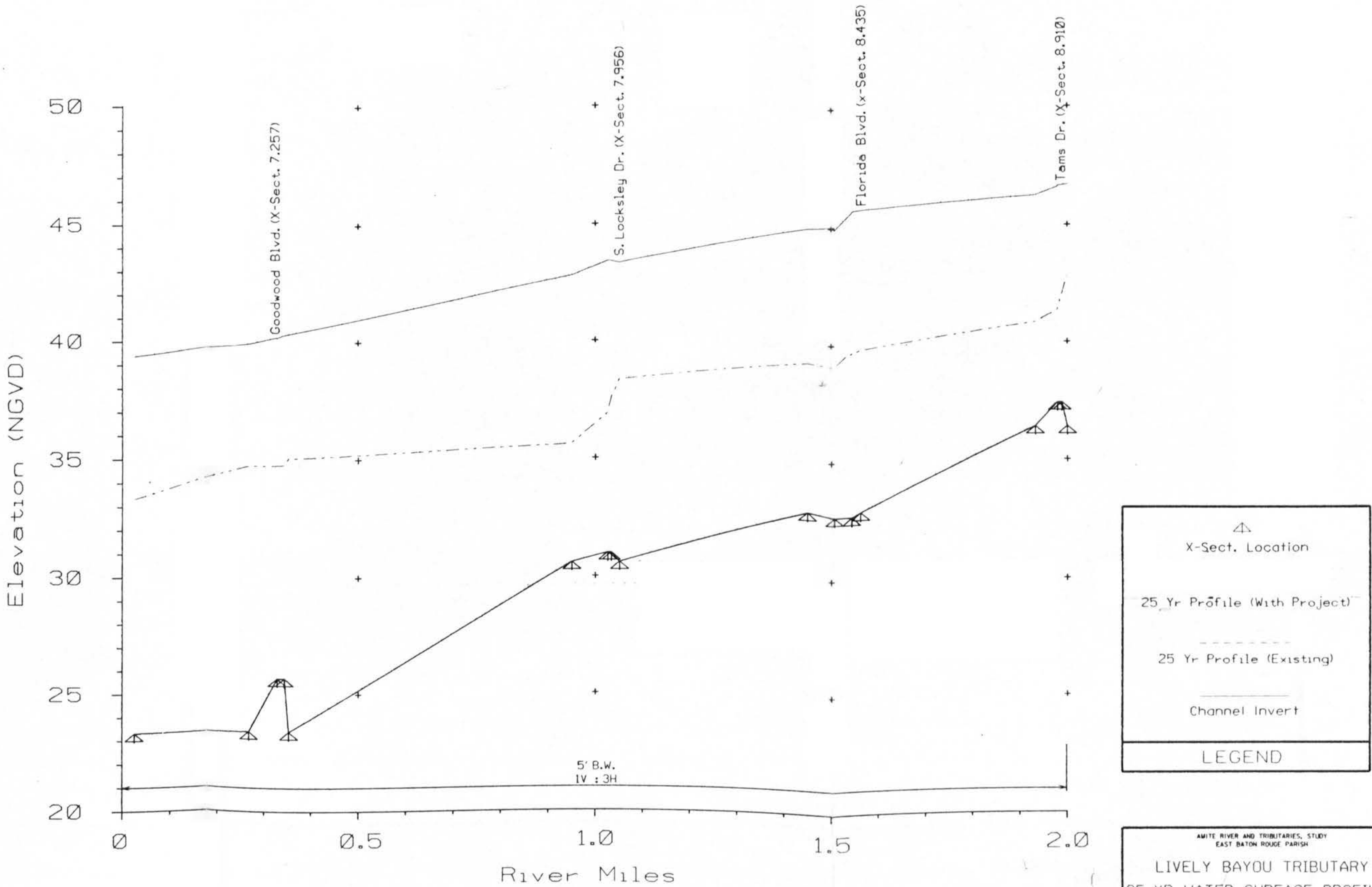


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

LIVELY BAYOU
100-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB			FILE NO.	
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273	

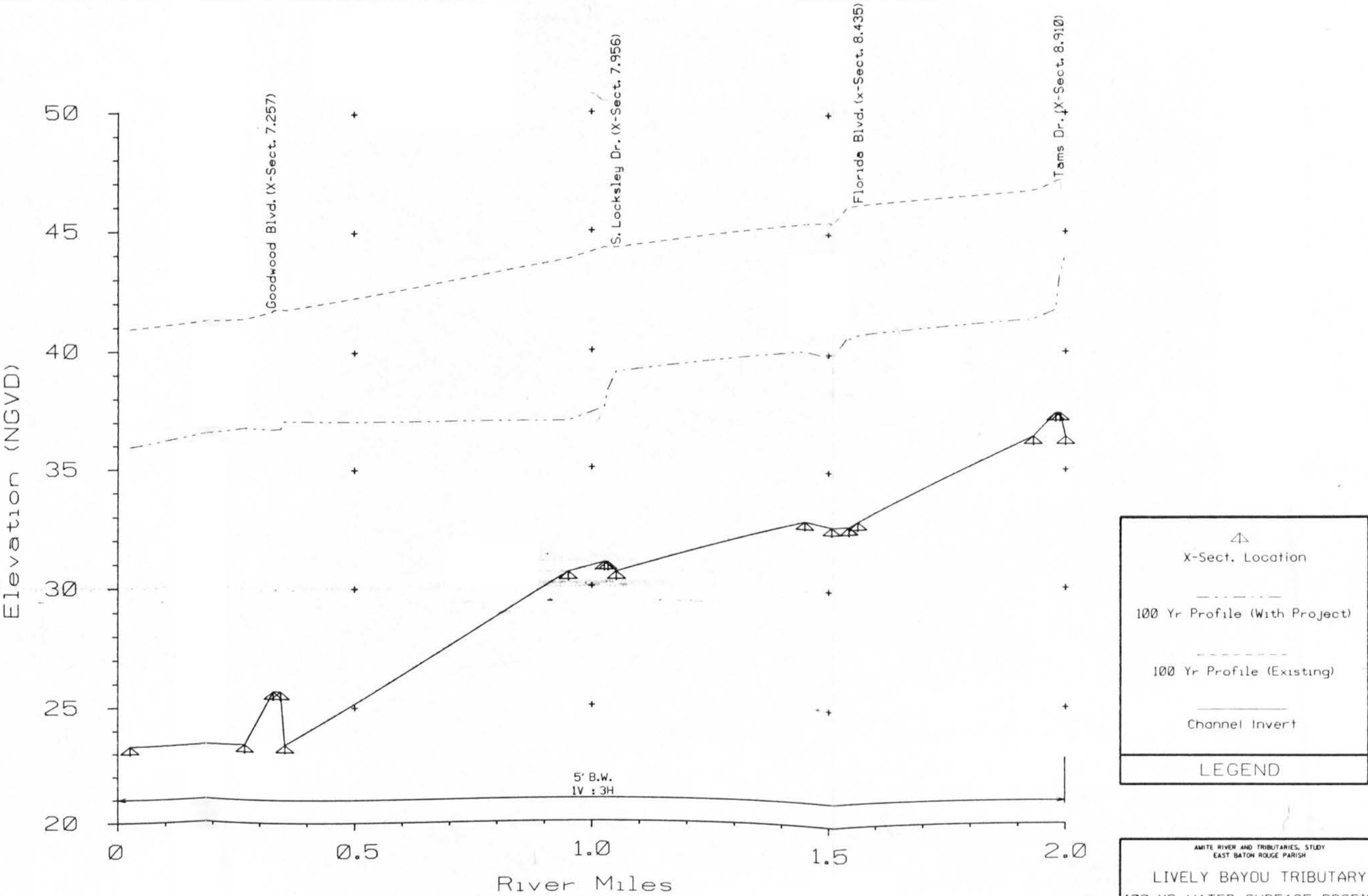


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

LIVELY BAYOU TRIBUTARY
25-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB DRAWN BY: CJB CHECKED BY: CES	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	FILE NO. H-4-40273
	DATE: AUGUST 1993			

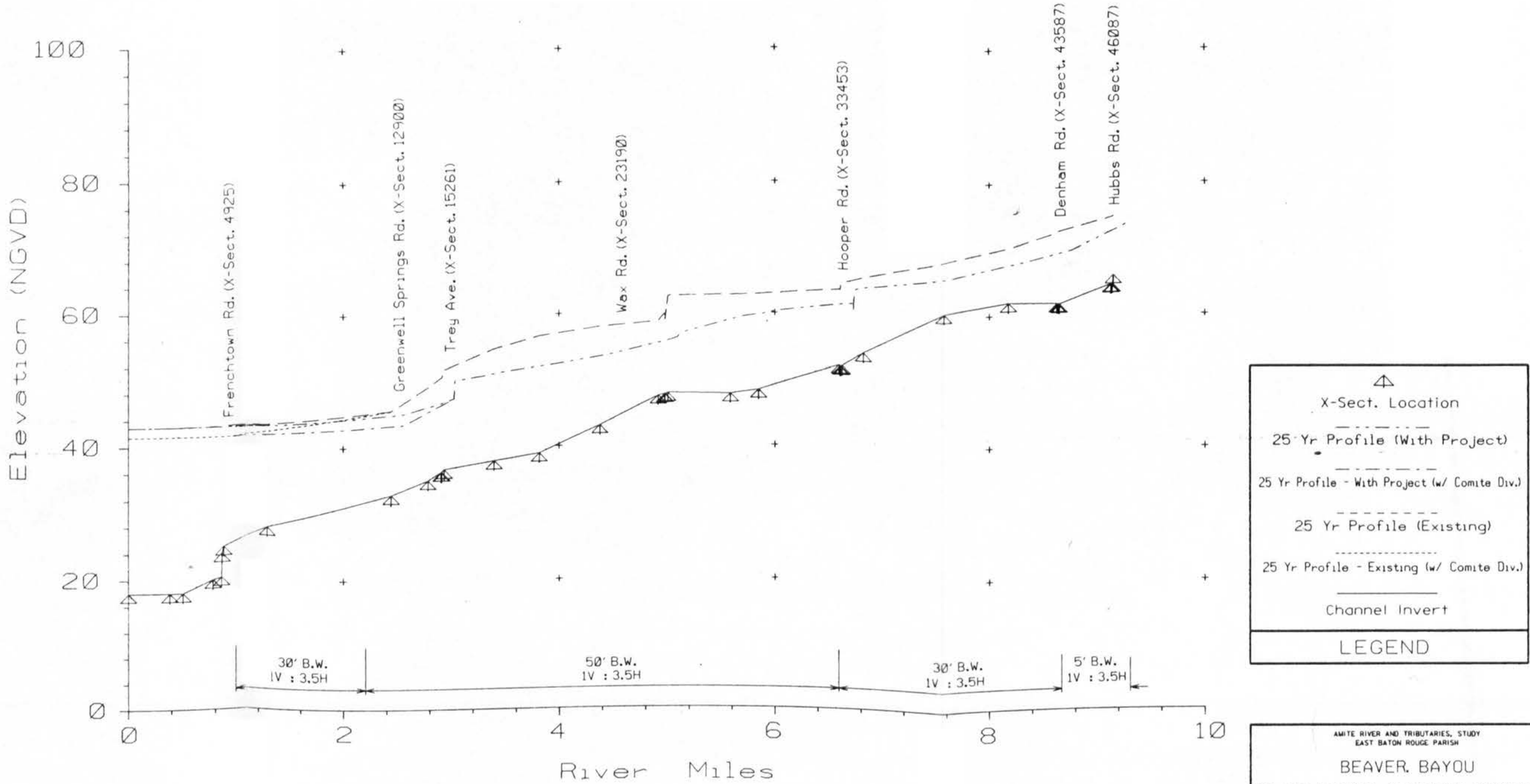


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

LIVELY BAYOU TRIBUTARY
100-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

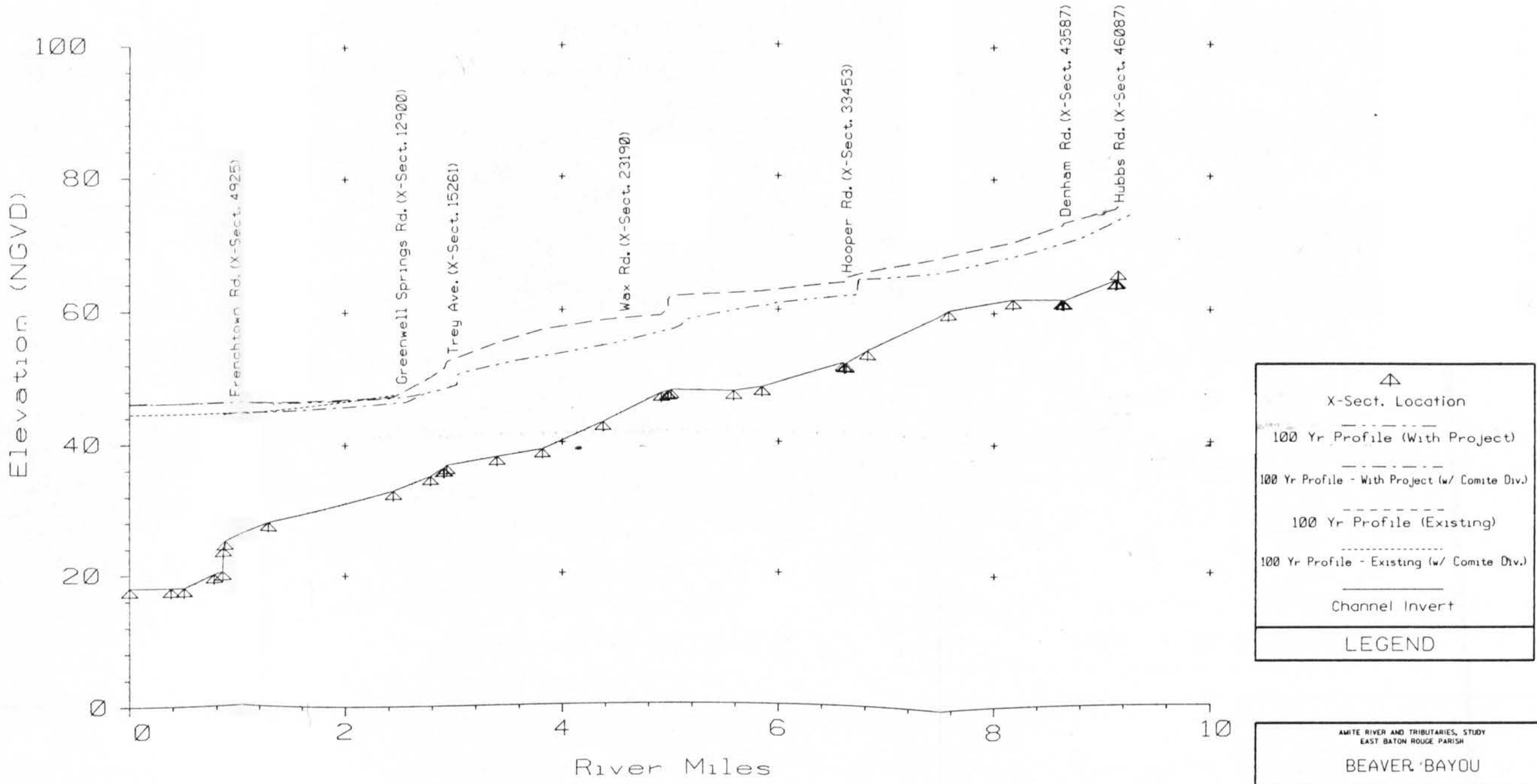


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BEAVER BAYOU
25-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB DRAWN BY: CJB CHECKED BY: CES	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
	DATE: AUGUST 1995		FILE NO. H-4-40273

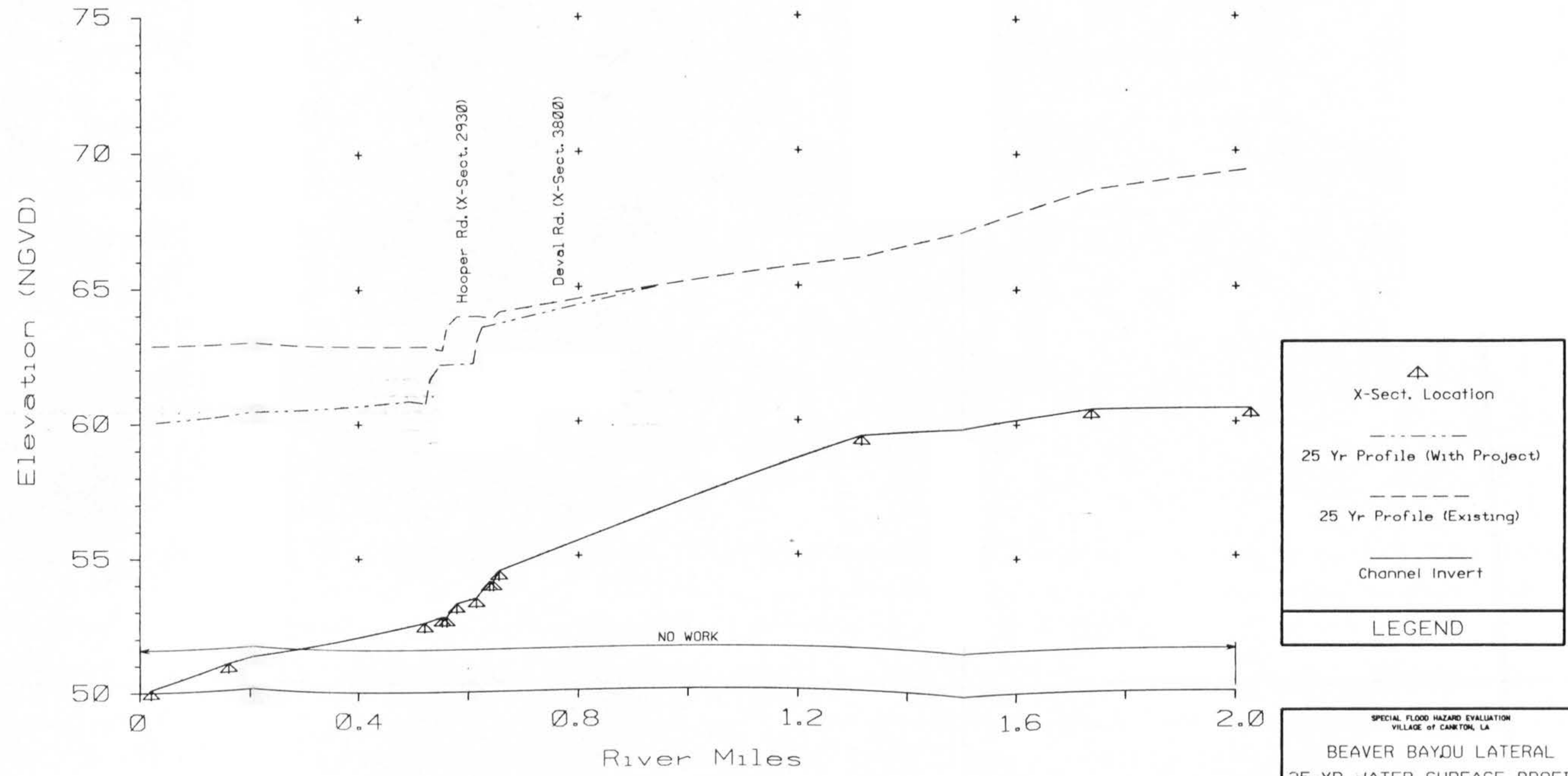


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BEAVER BAYOU
100-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

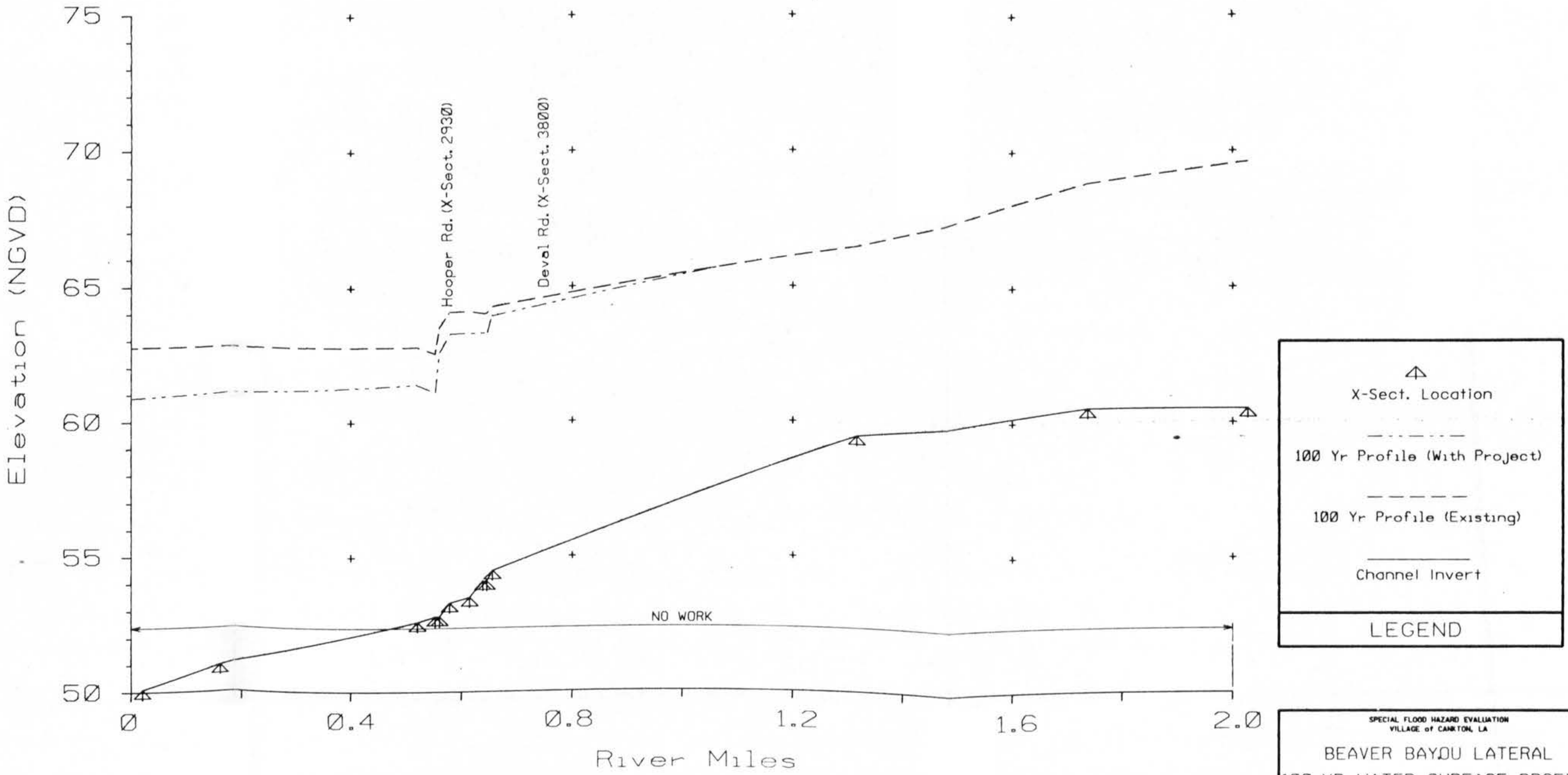


SPECIAL FLOOD HAZARD EVALUATION
VILLAGE of CANKTON, LA

BEAVER BAYOU LATERAL
25-YR. WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO.
CHECKED BY: CES	DATE: OCT. '93		H-4-40273

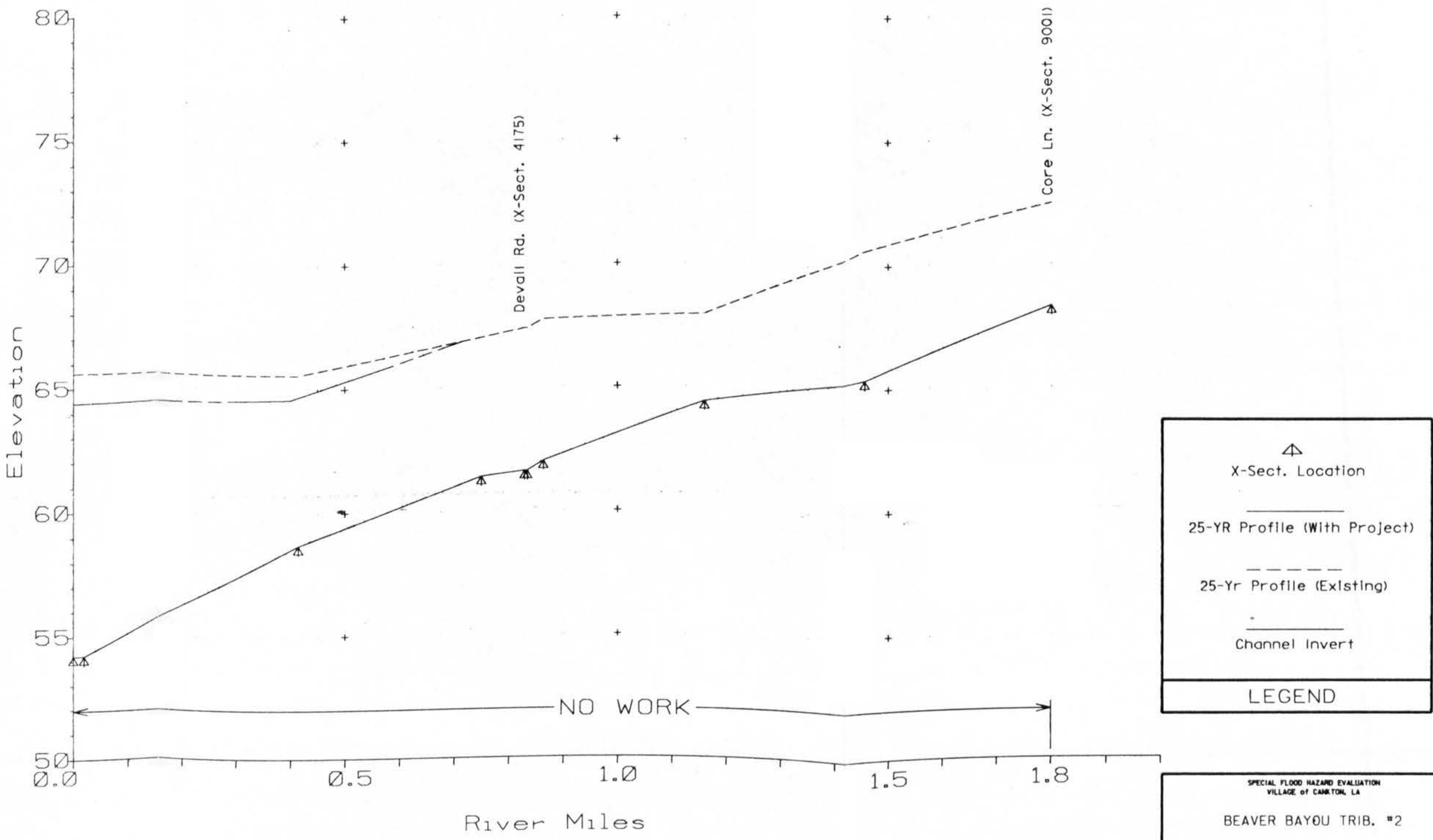


SPECIAL FLOOD HAZARD EVALUATION
VILLAGE of CANKTON, LA

BEAVER BAYOU LATERAL
100-YR. WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY: CJB	NONE		FILE NO.
CHECKED BY: CES	DATE: OCT. '93		H-4-40275



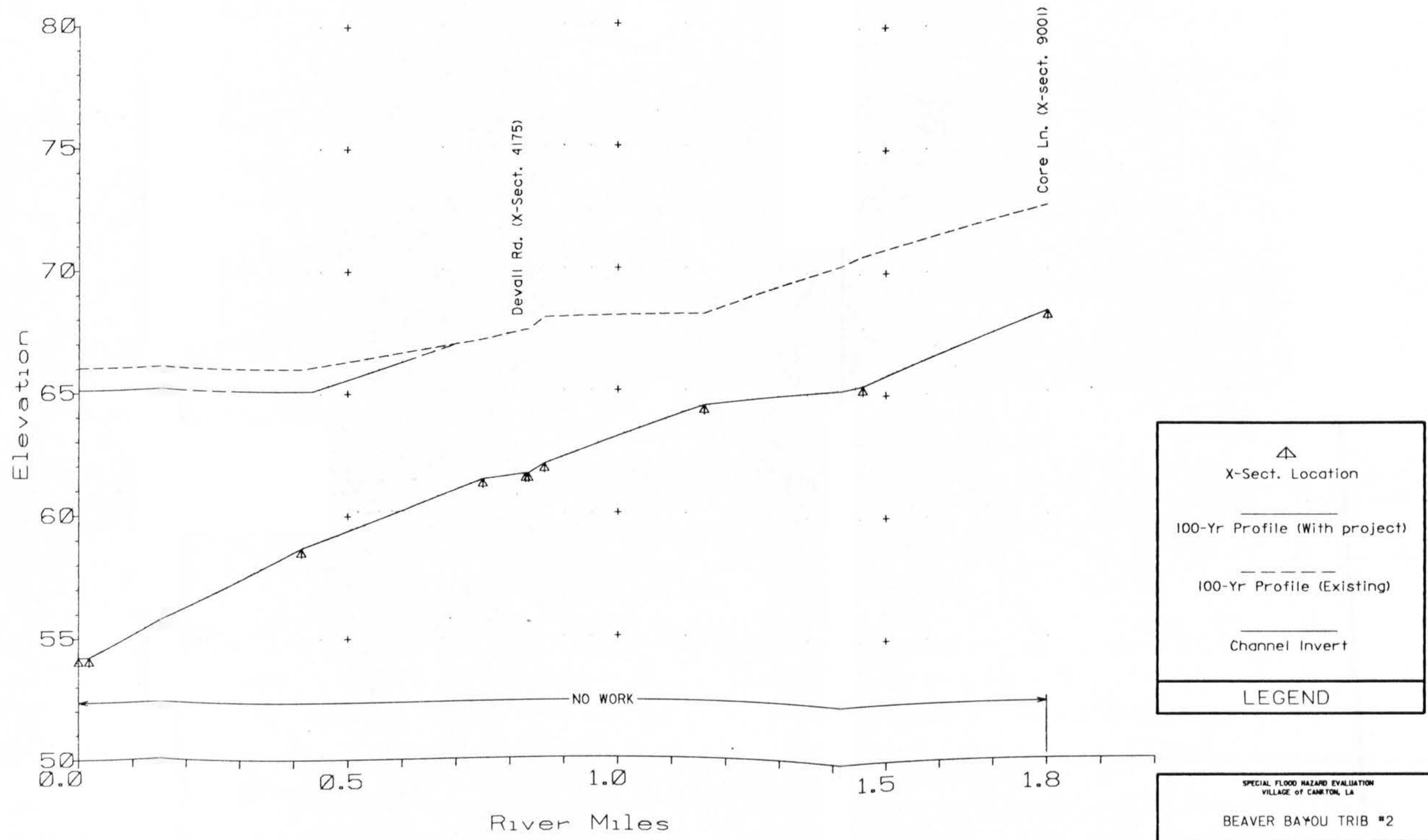
SPECIAL FLOOD HAZARD EVALUATION
VILLAGE of CANKTON, LA

BEAVER BAYOU TRIB. #2

25 -YR. WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO.
CHECKED BY: CES	DATE: OCT. '93		H-4-40275

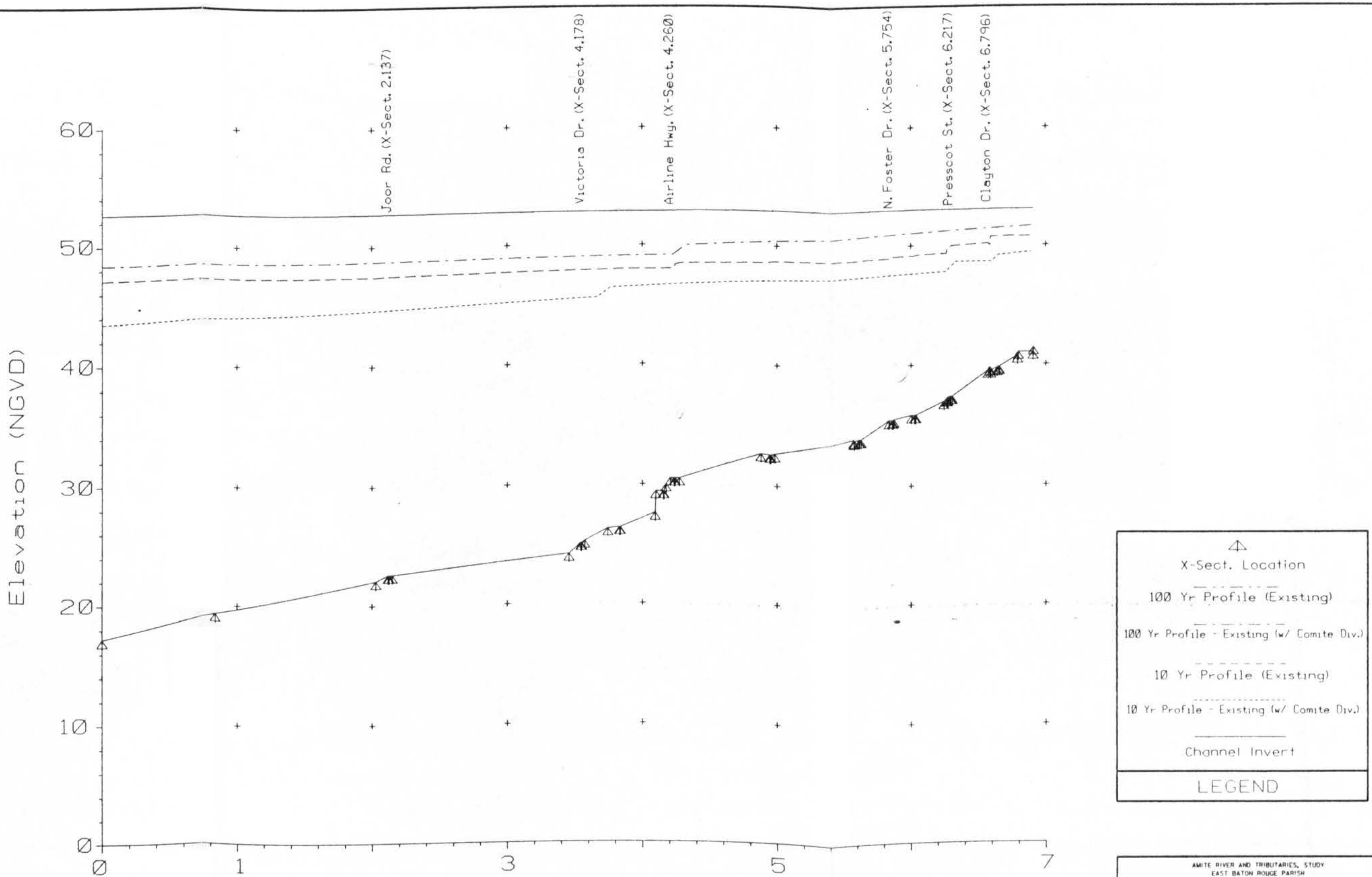


SPECIAL FLOOD HAZARD EVALUATION
VILLAGE of CANKTON, LA

BEAVER BAYOU TRIB #2
100-YR. WATER SURFACE PROFILE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO.
CHECKED BY:	CES	DATE: OCT. '93		H-4-40273

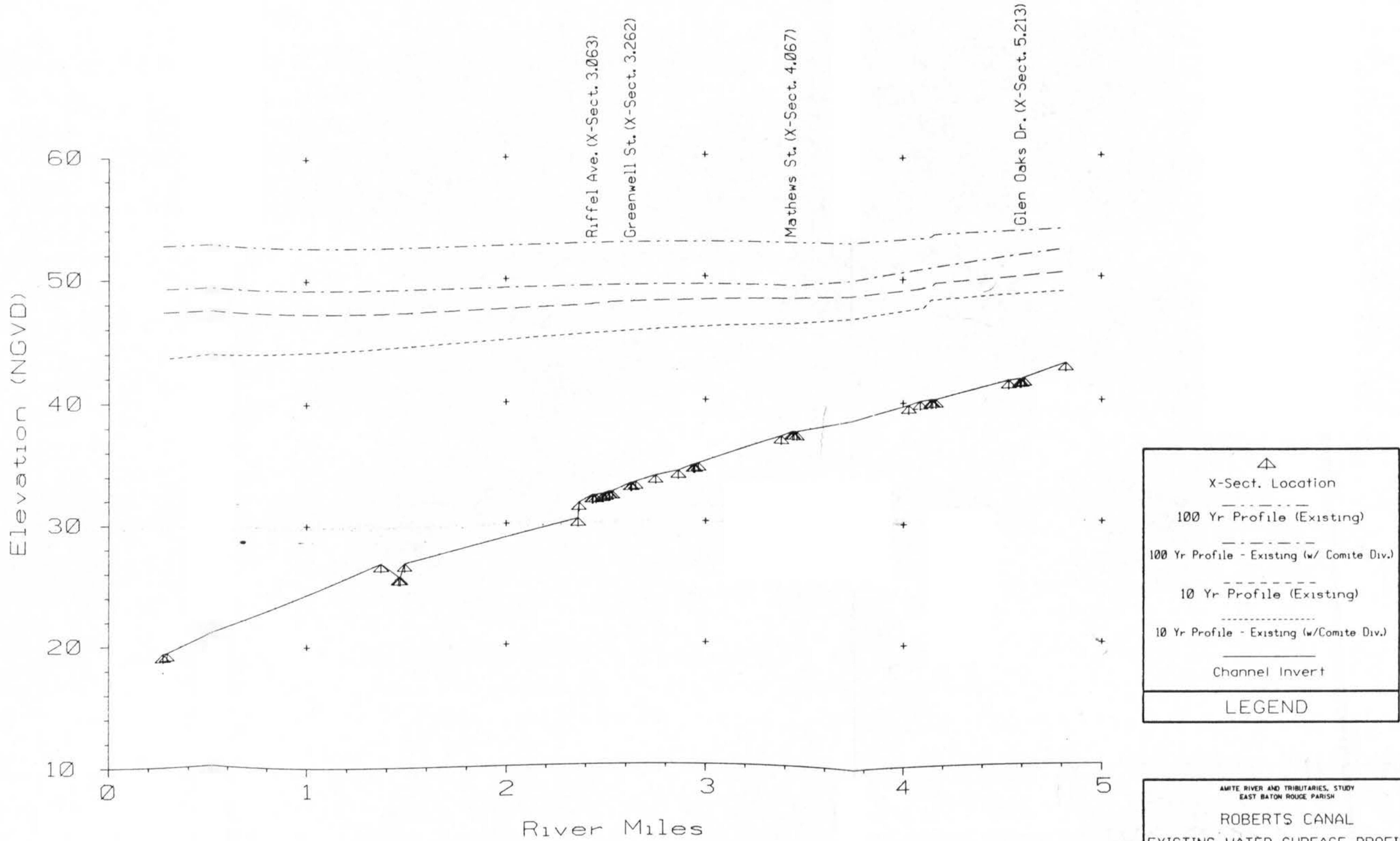


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

HURRICANE CREEK
EXISTING WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB			FILE NO.	
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273	

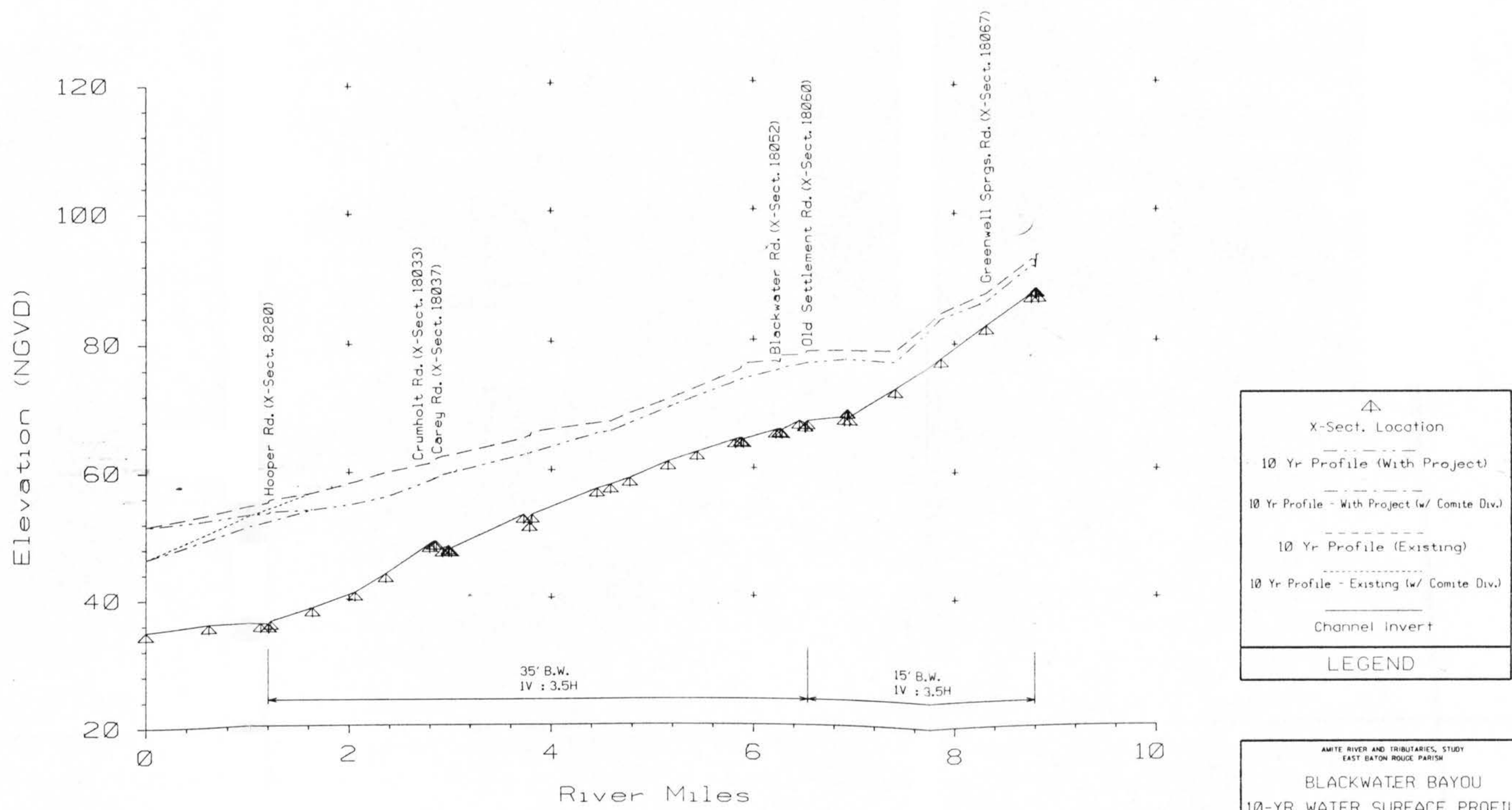


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

ROBERTS CANAL
EXISTING WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

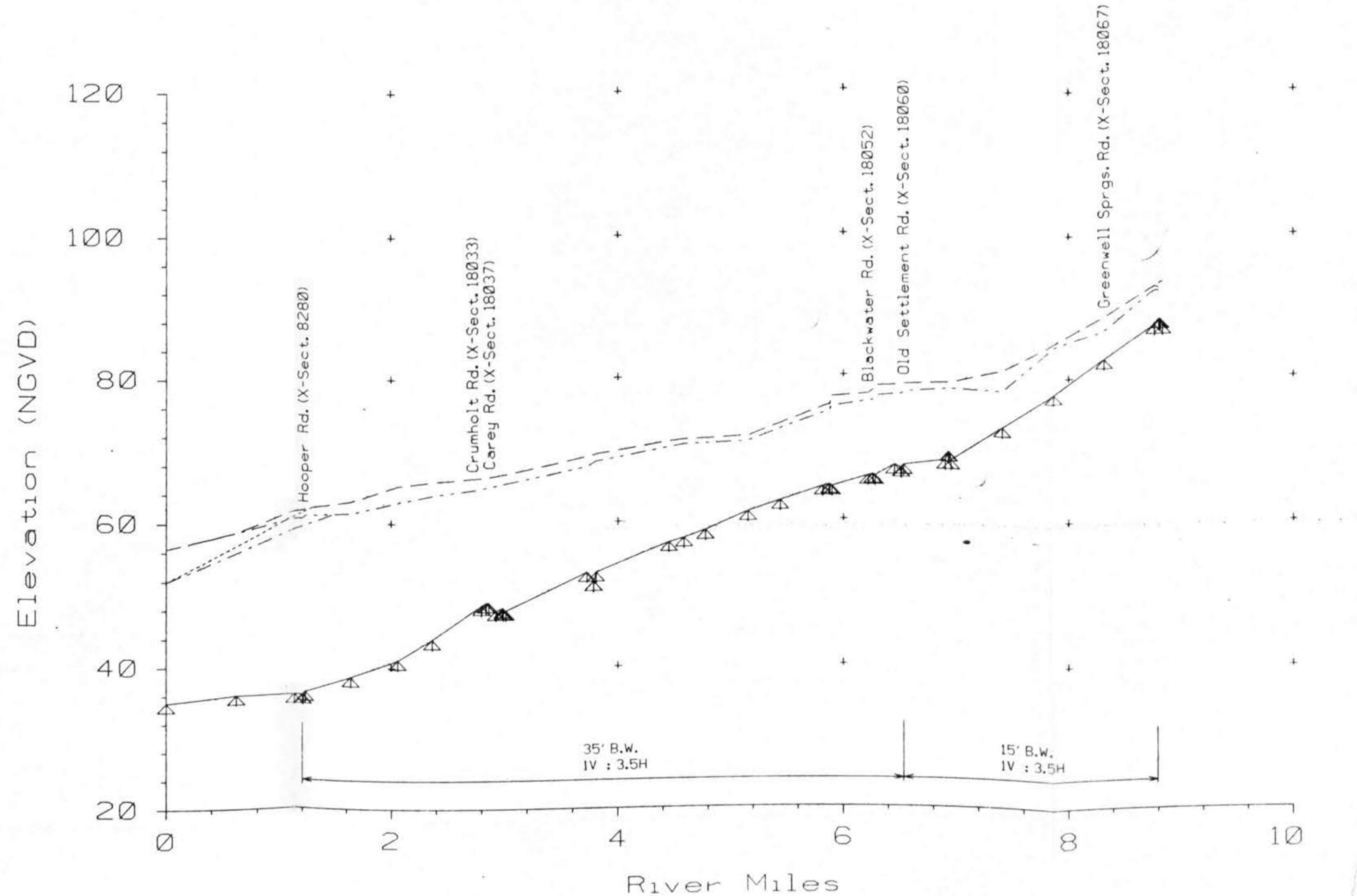


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU
10-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		



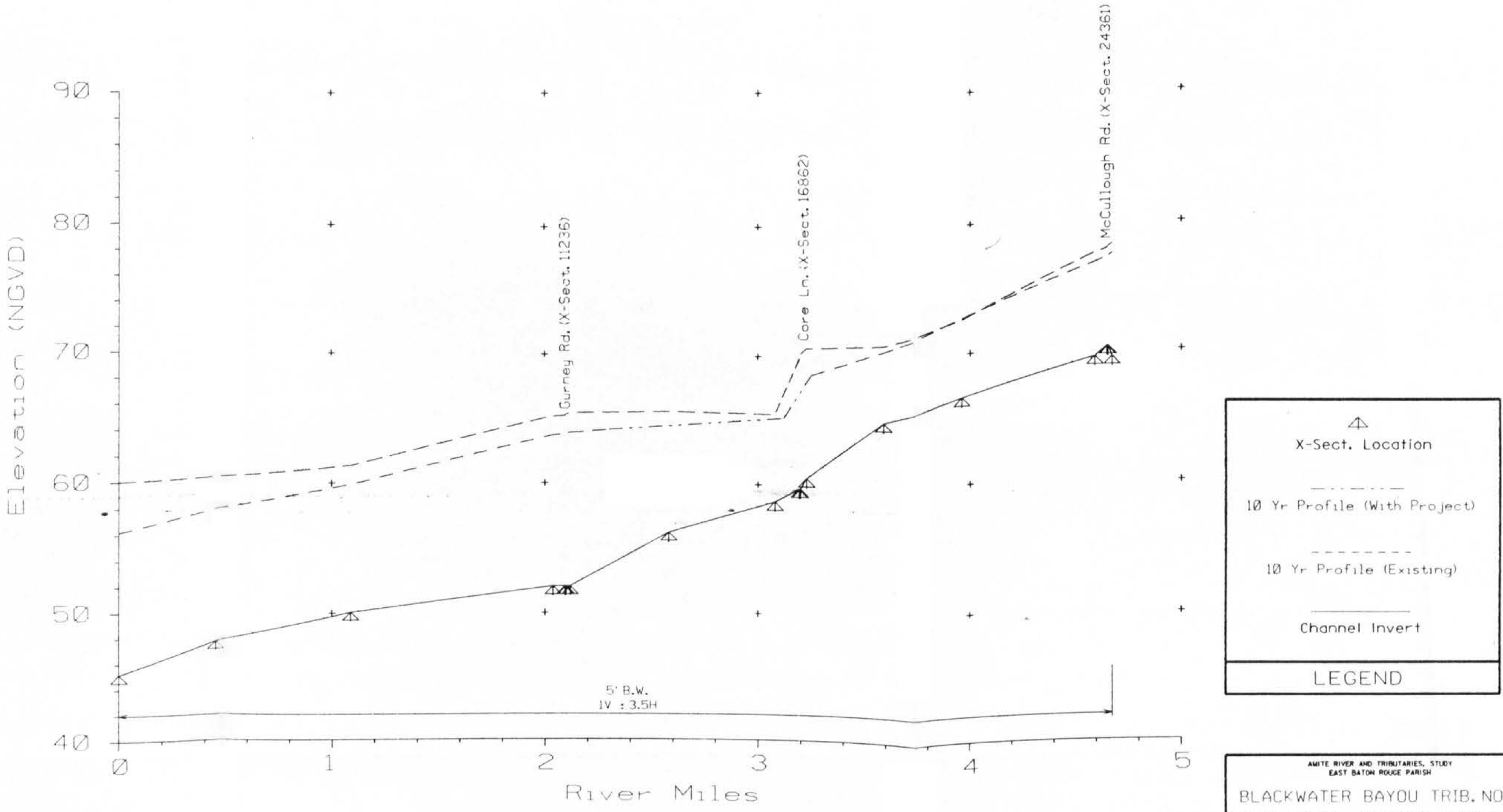
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU
100-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB	NONE		FILE NO.	
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273	

PLATE C-45

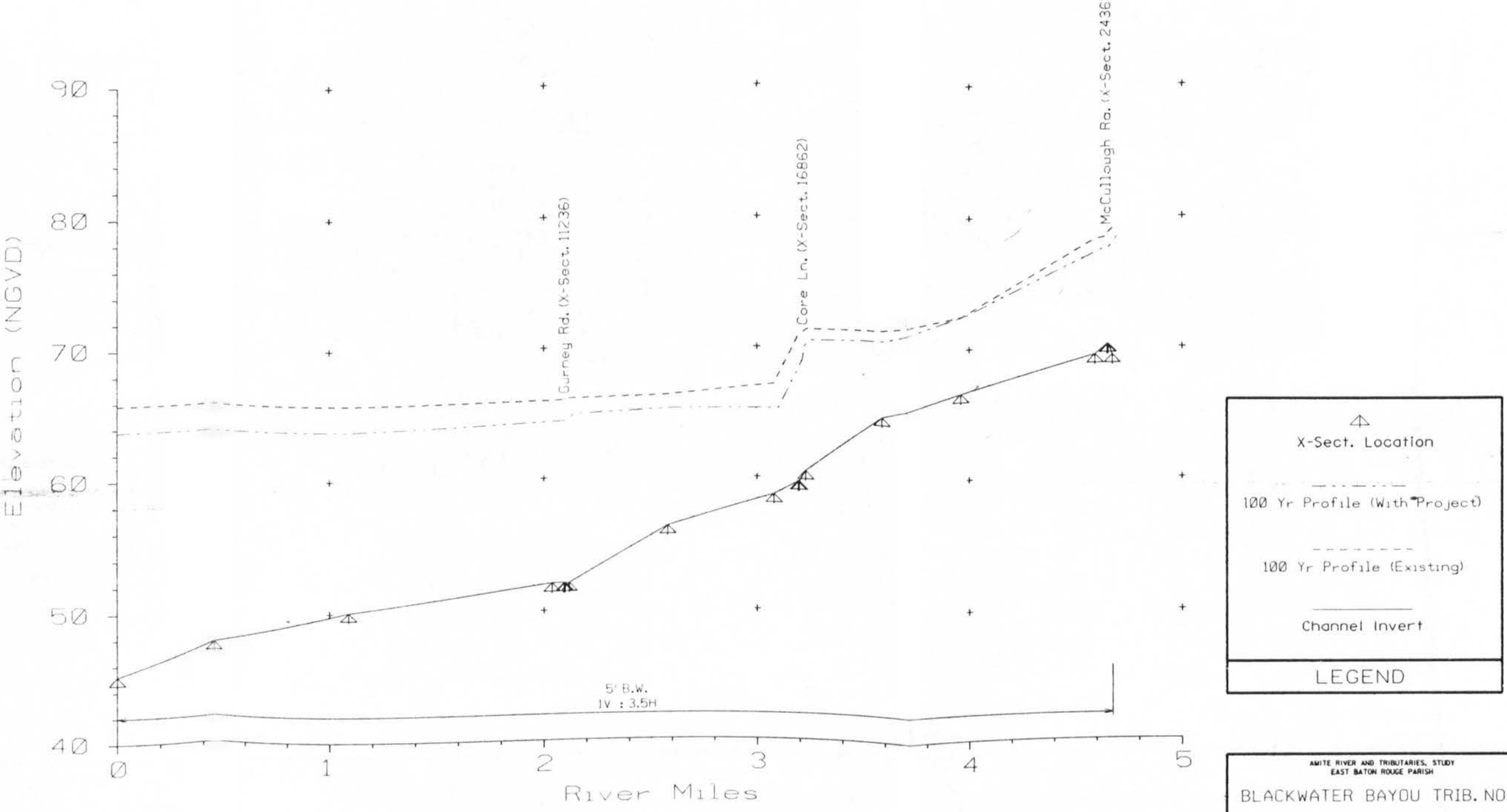


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU TRIB. NO. 1
10-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		



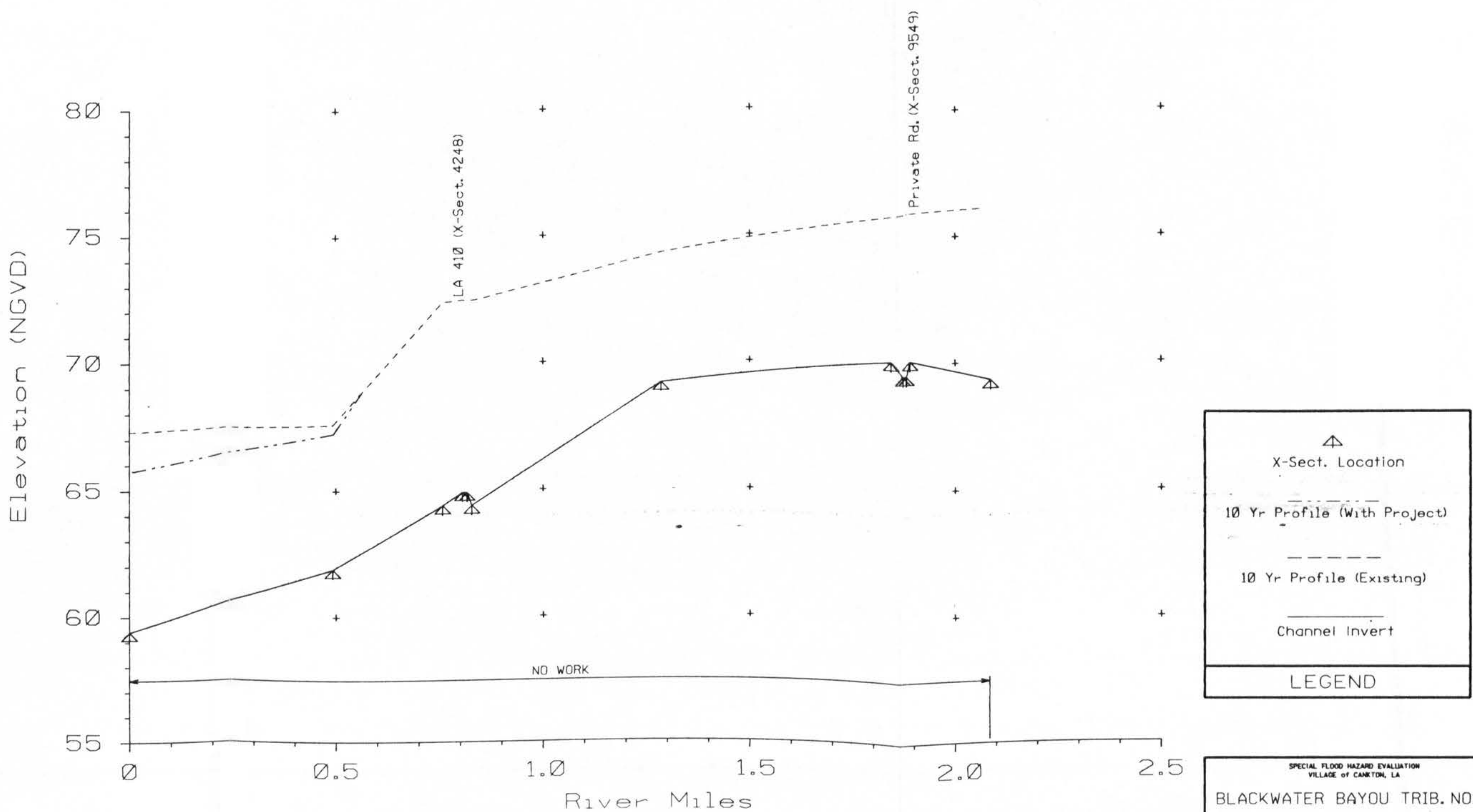
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU TRIB. NO. 1
100-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

PLATE C-47

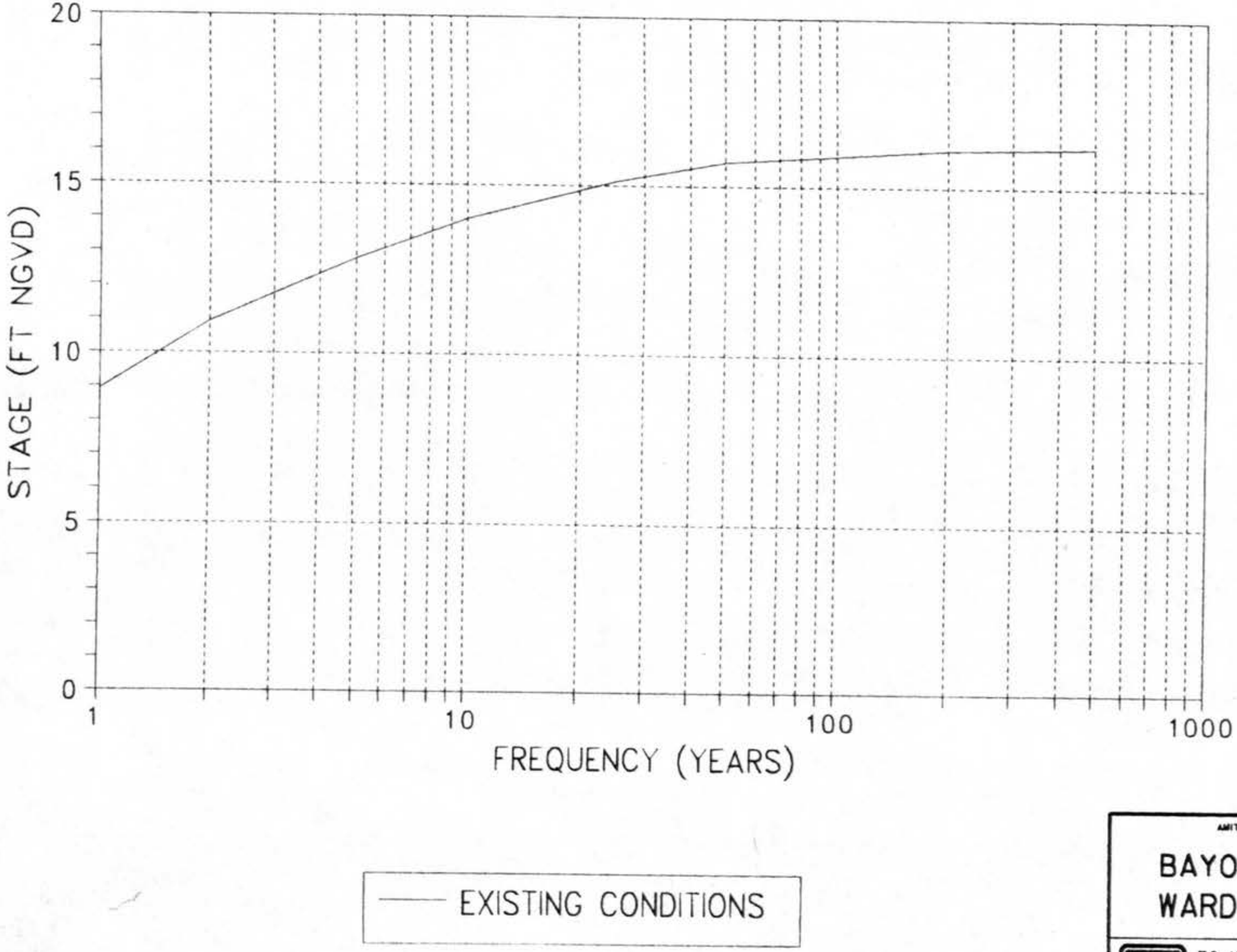


SPECIAL FLOOD HAZARD EVALUATION
VILLAGE of CANKTON, LA

BLACKWATER BAYOU TRIB. NO. 2
10-YR WATER SURFACE PROFILES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO.
CHECKED BY: CES	DATE: OCT. '93		H-4-40273



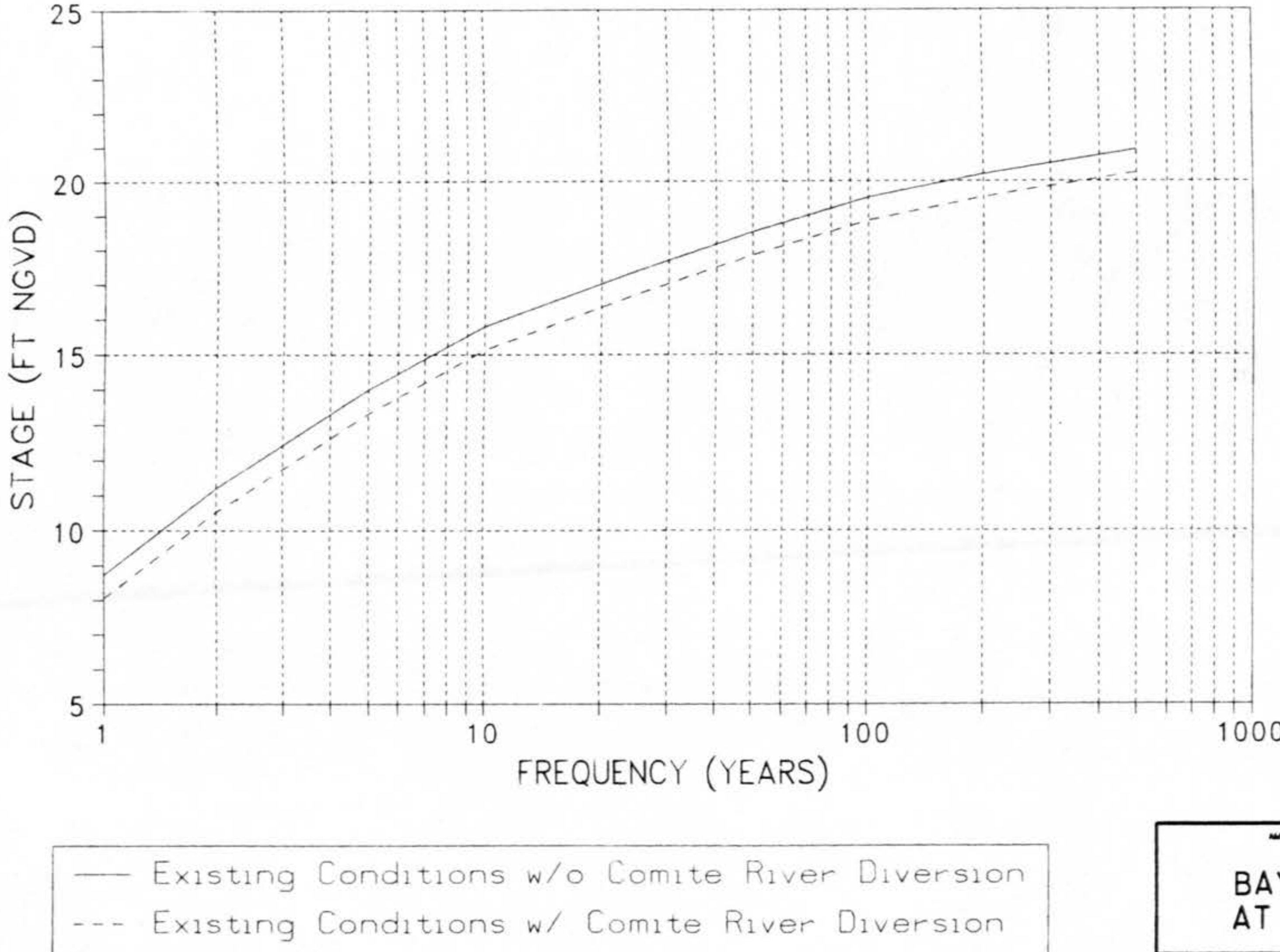
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU MANCHAC AT WARD CREEK MOUTH

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

BAYOU MANCHAC AT AMITE RIVER

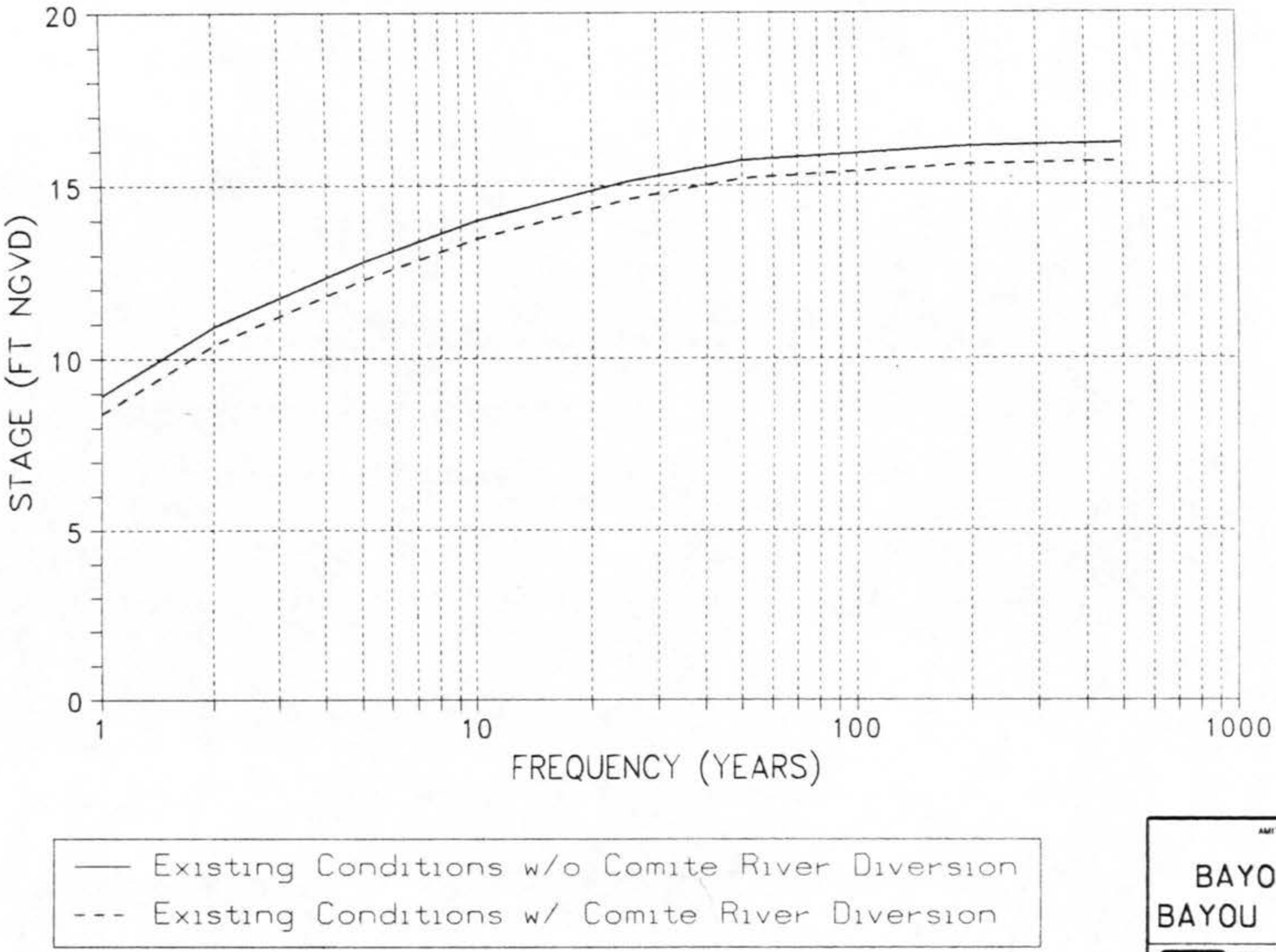


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU MANCHAC
AT AMITE RIVER

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB DRAWN BY: CJB CHECKED BY: CES	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
	DATE: AUGUST 1993		FILE NO. H-4-40273



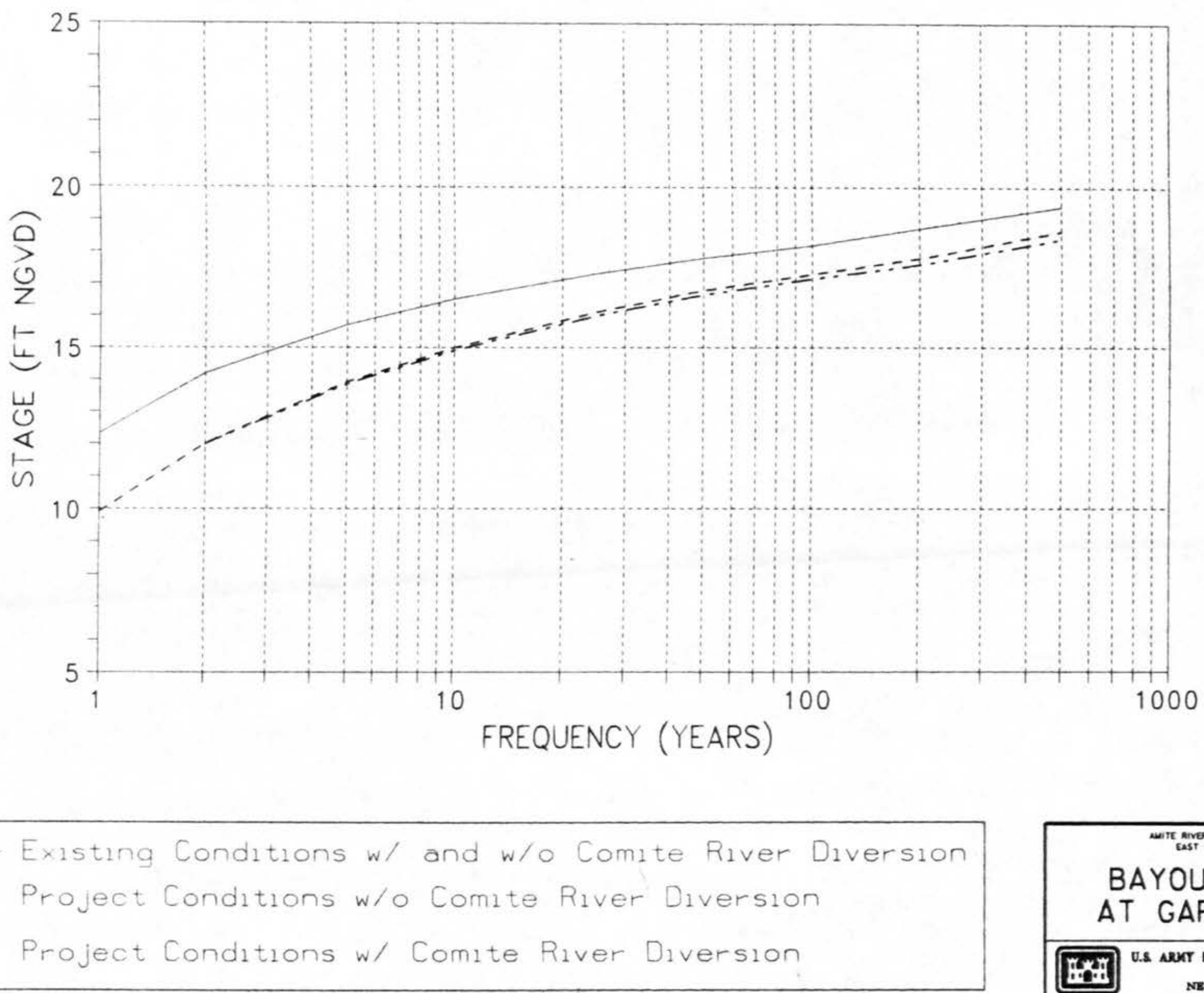
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU MANCHAC AT
BAYOU FOUNTAIN MOUTH

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY: CJB	NONE		FILE NO.
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273

PLATE C-52

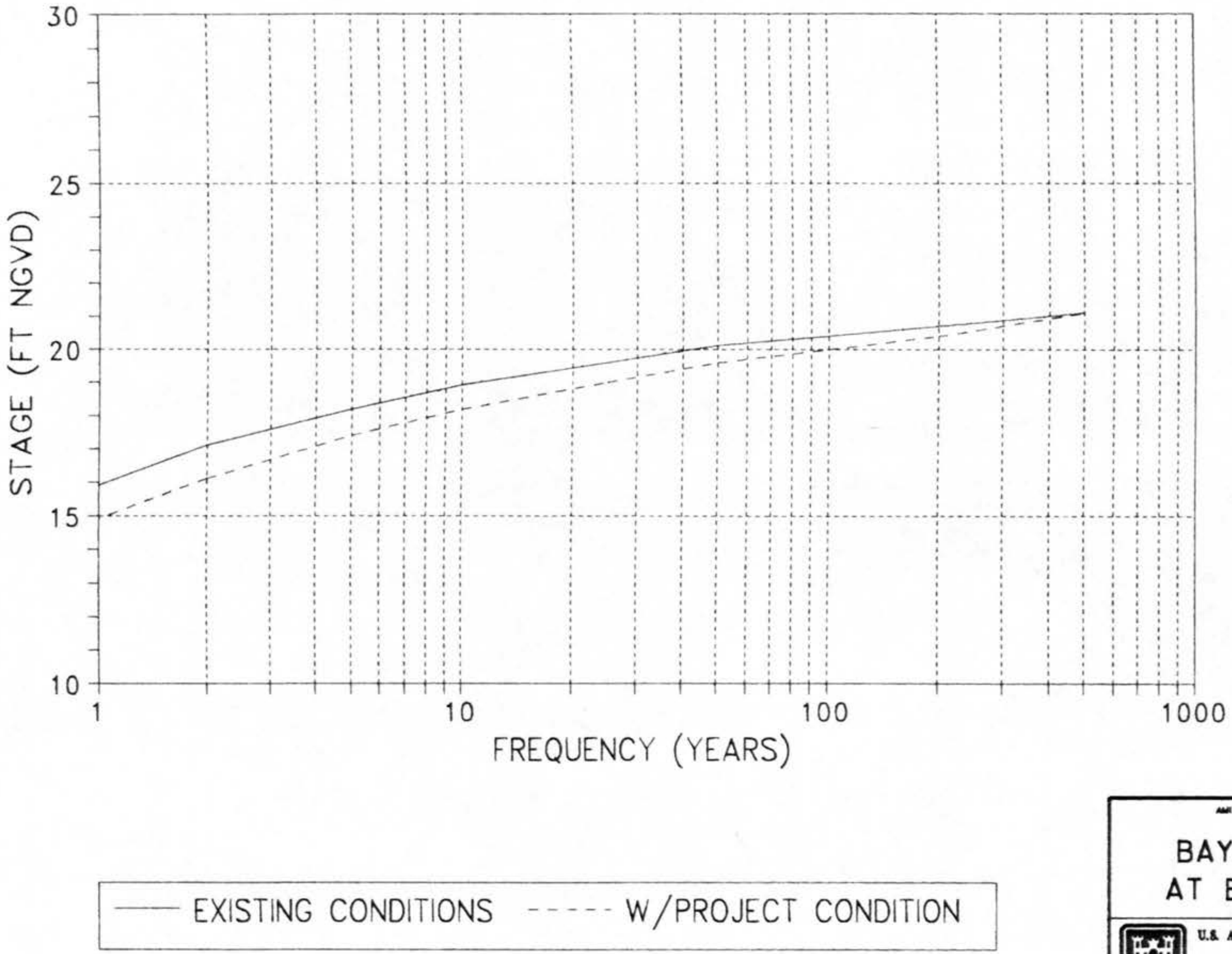


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN AT GARDERE LANE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		

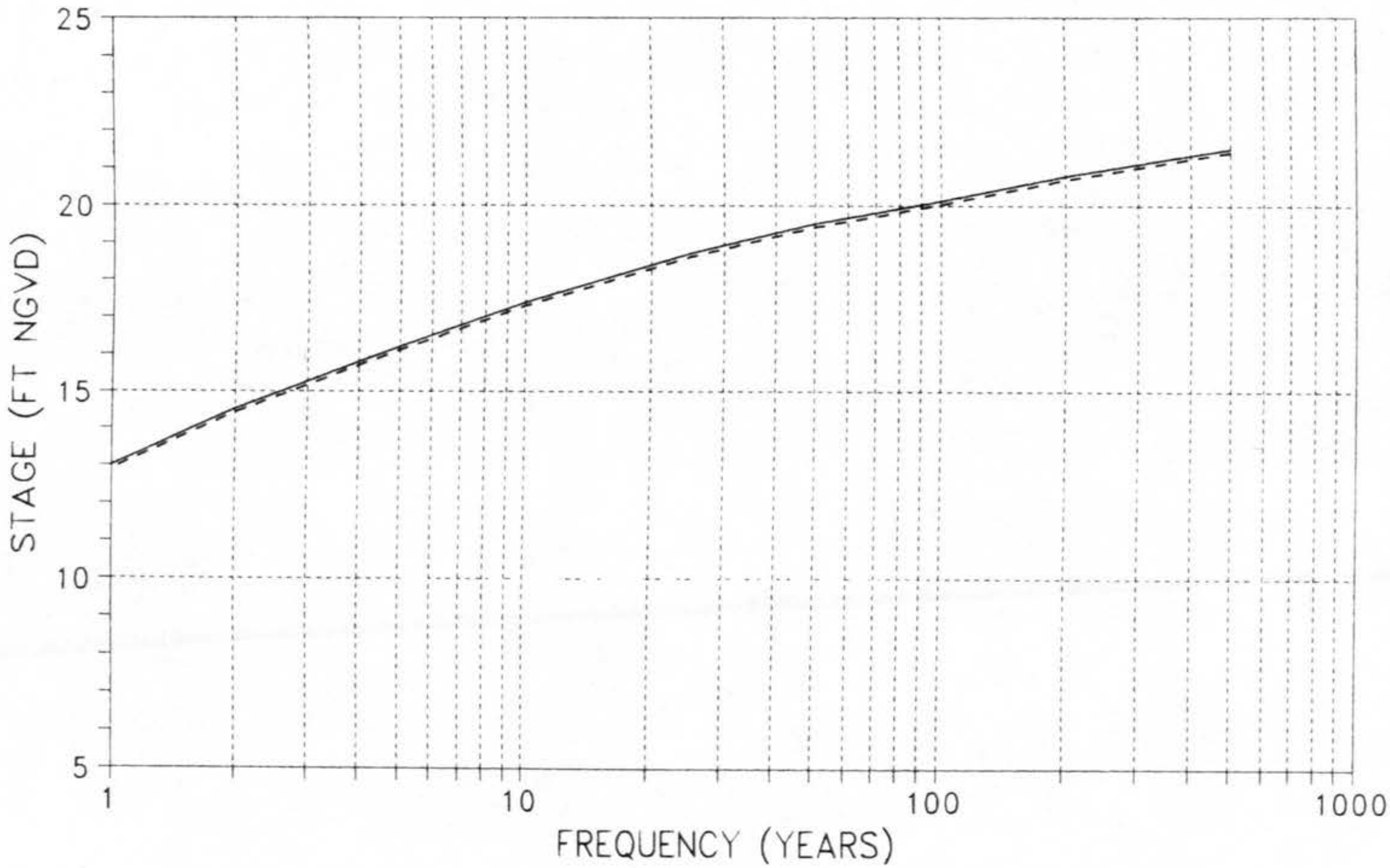


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN AT BEN HUR ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		



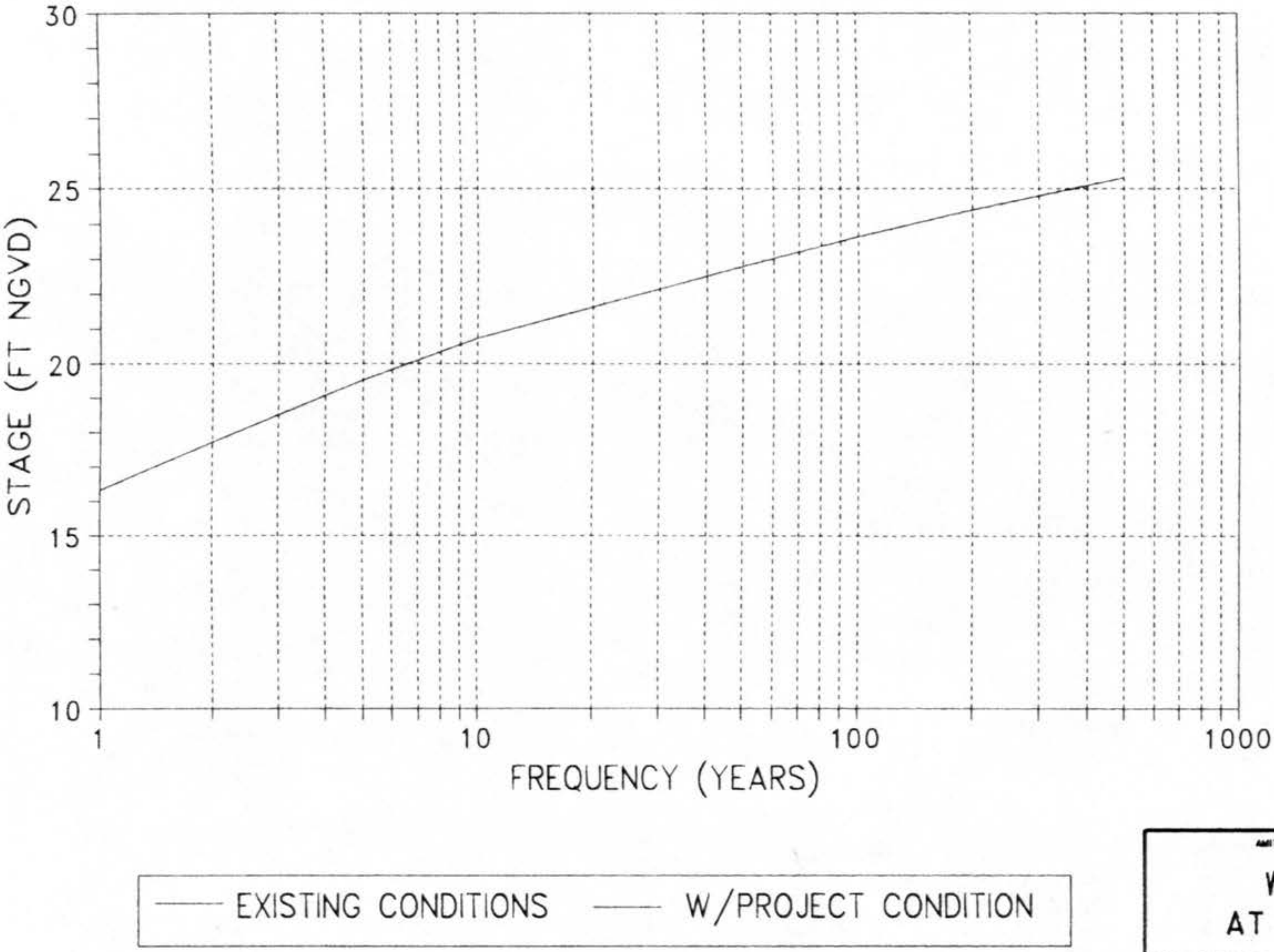
———	Existing Conditions and Project Conditions w/o Comite River Diversion
- - - -	Existing Conditions and Project Conditions w/ Comite River Diversion

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK AT BARRINGER FOREMAN RD.

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

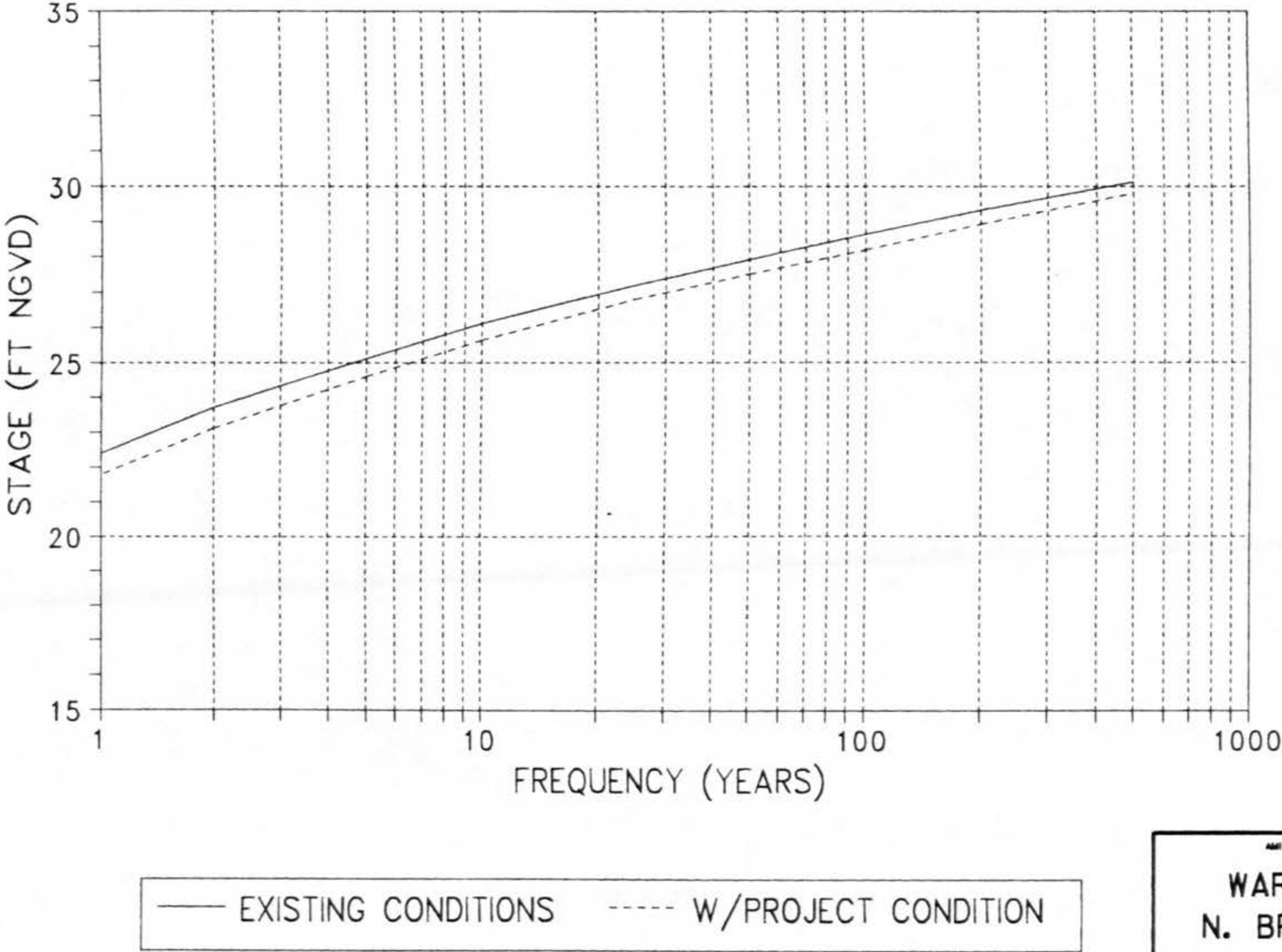


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK AT SIEGEN LANE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

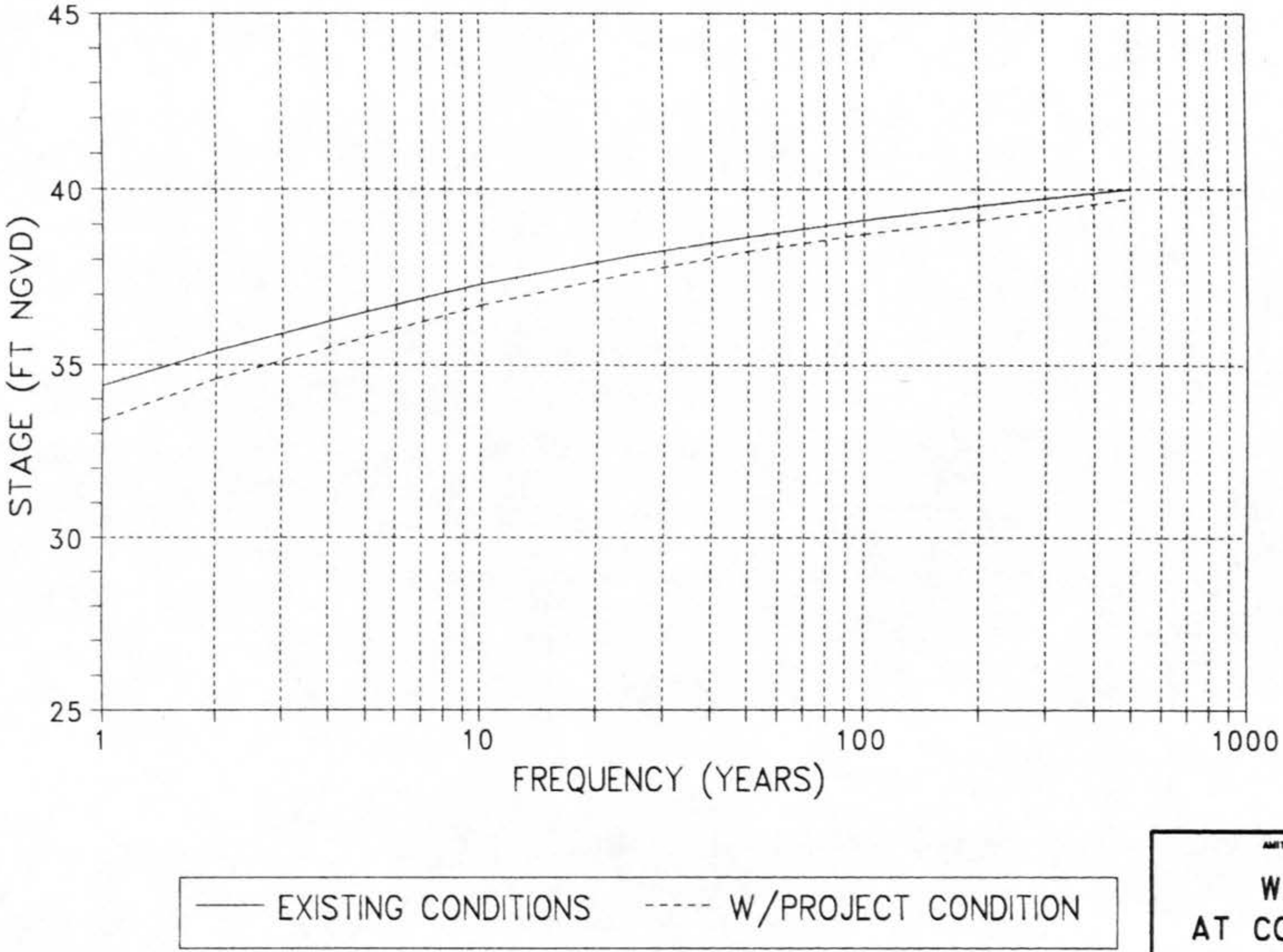


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK AT
N. BR. WARD CREEK

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB	NONE		FILE NO.	
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273	

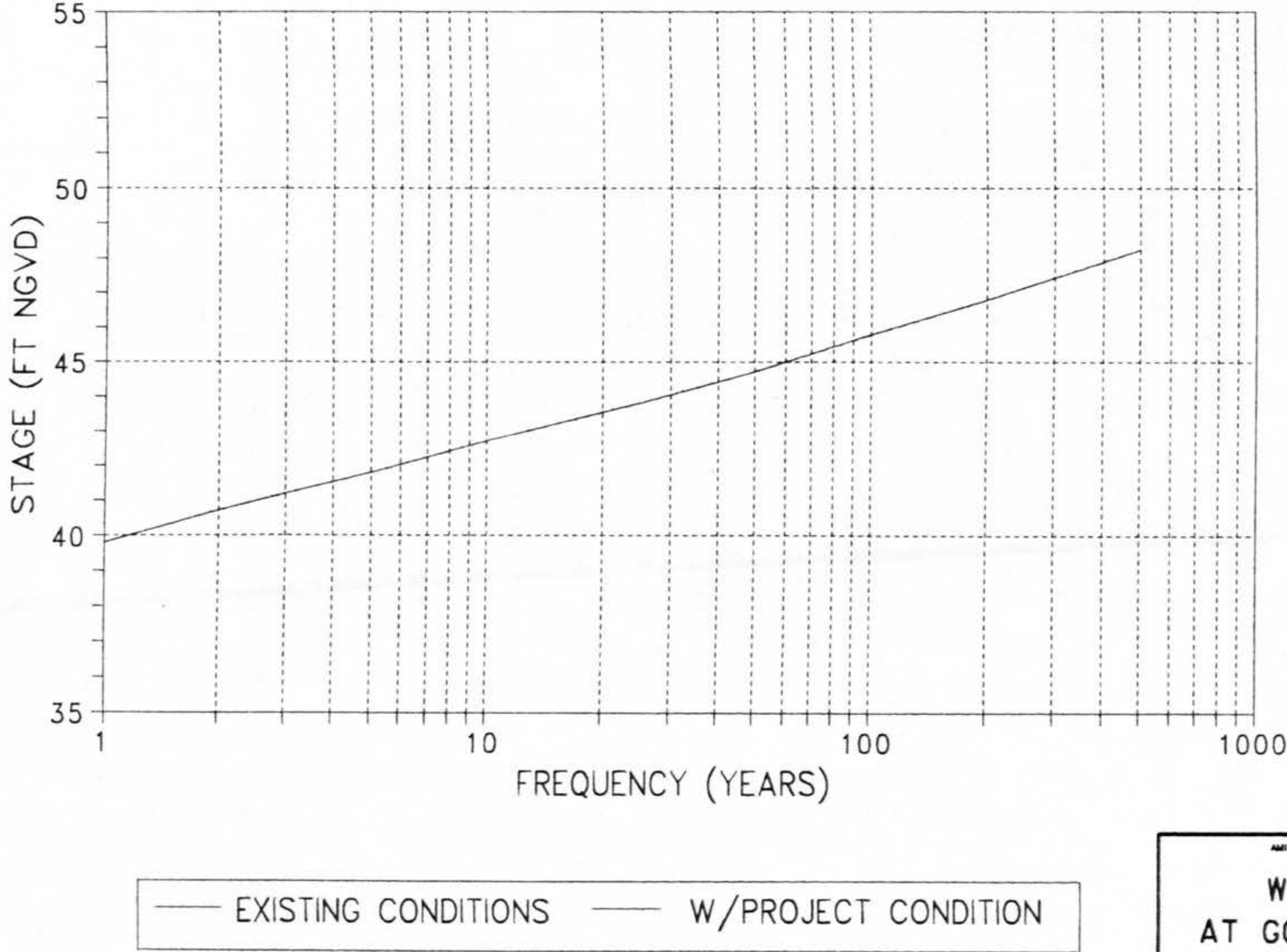


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK AT CORPORATE BLVD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		

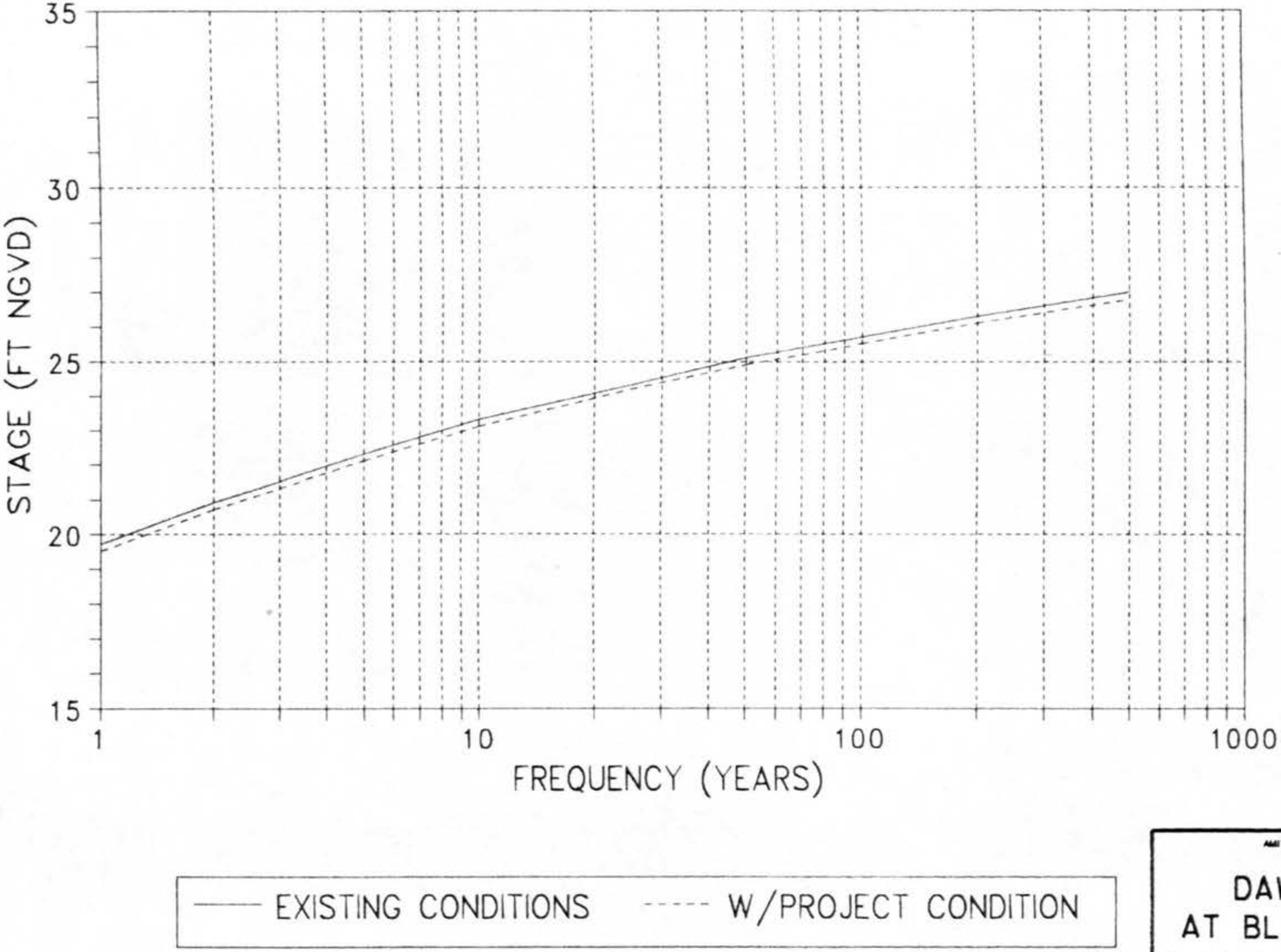


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK
AT GOVERNMENT ST.

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO.
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273

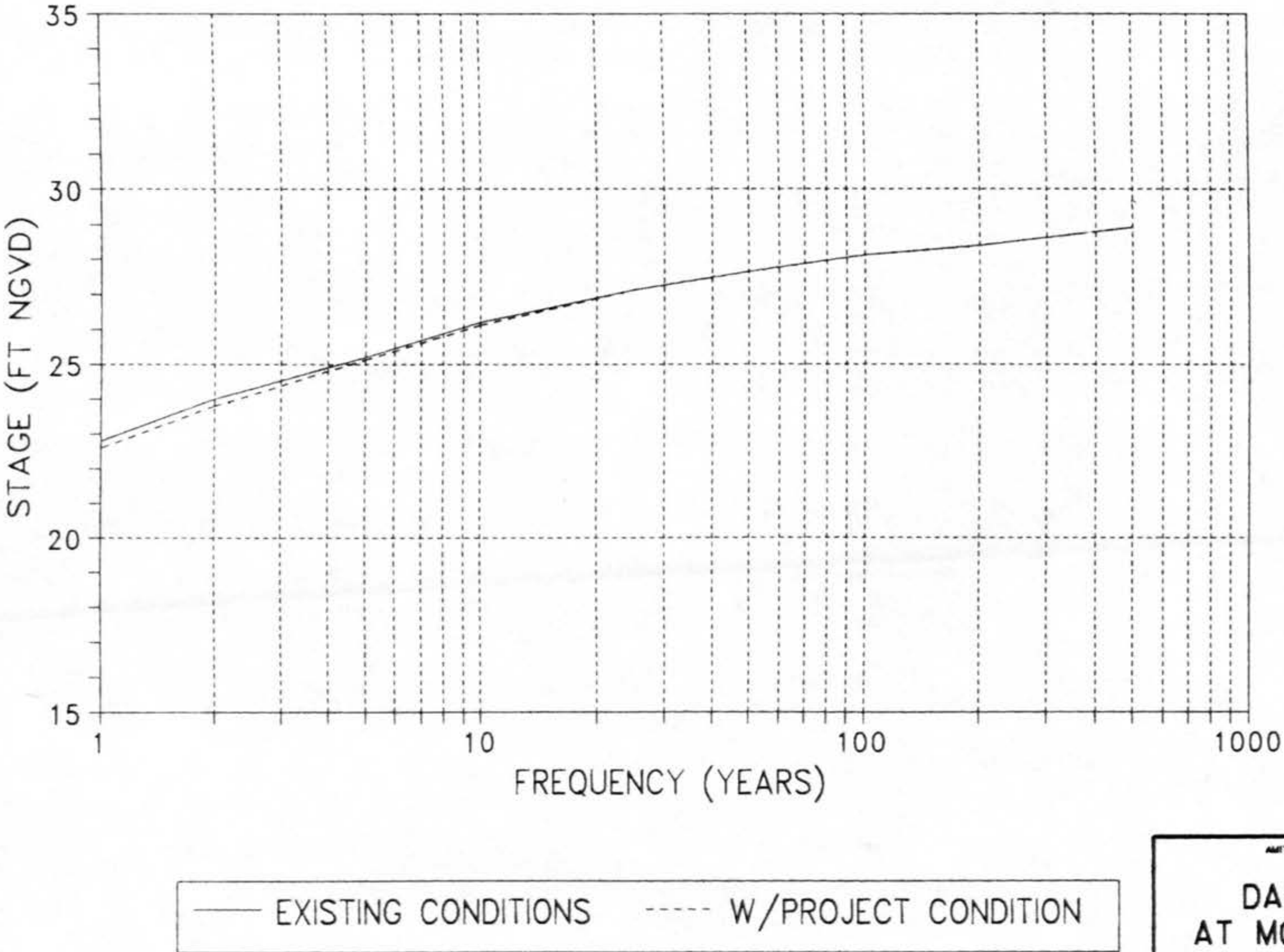


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

DAWSON CREEK AT BLUEBONNET ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB DRAWN BY: CJB CHECKED BY: CES	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	
	DATE: AUGUST 1993		FILE NO. H-4-40273	



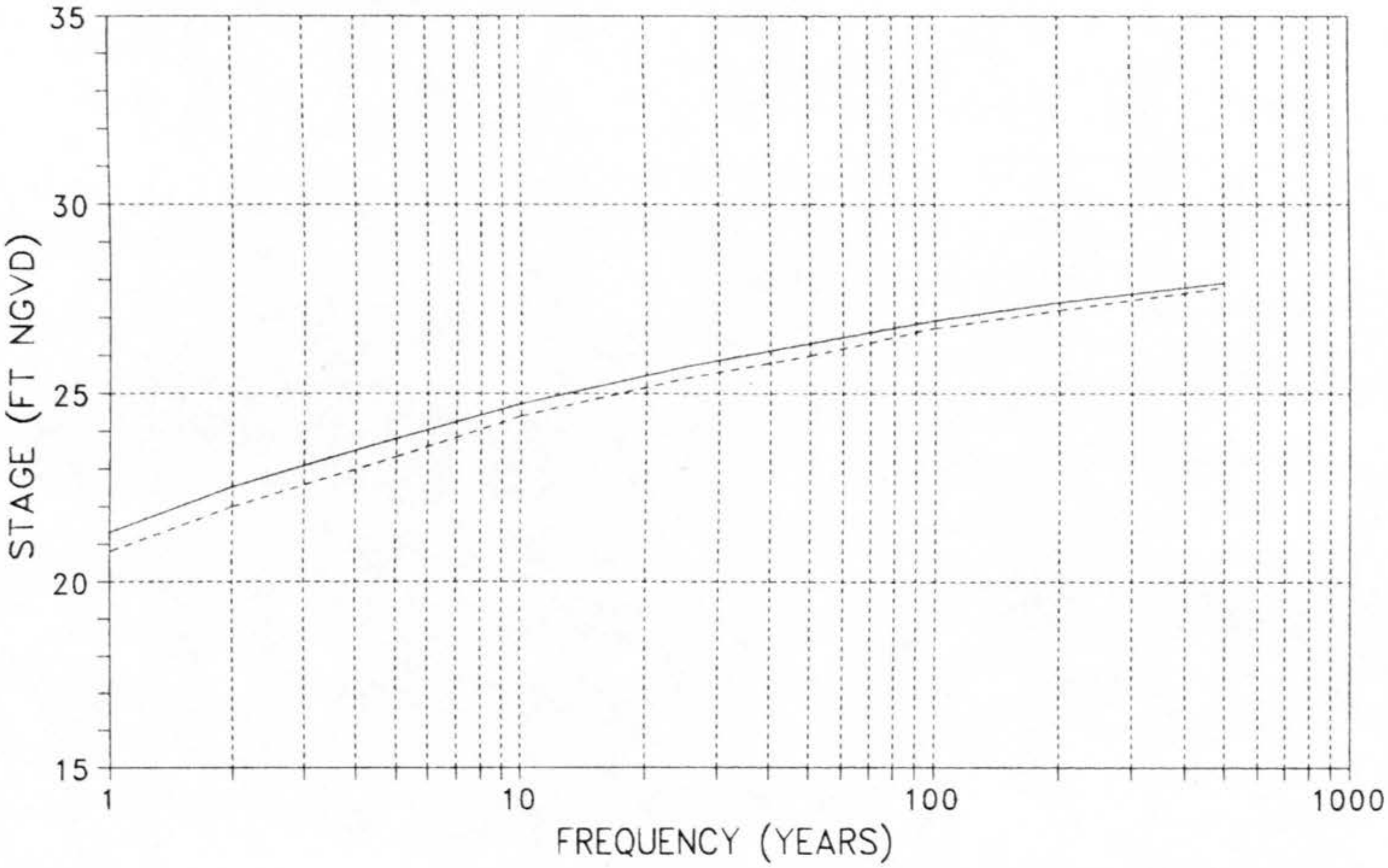
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

DAWSON CREEK
AT MOSS SIDE LANE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		

PLATE C-61

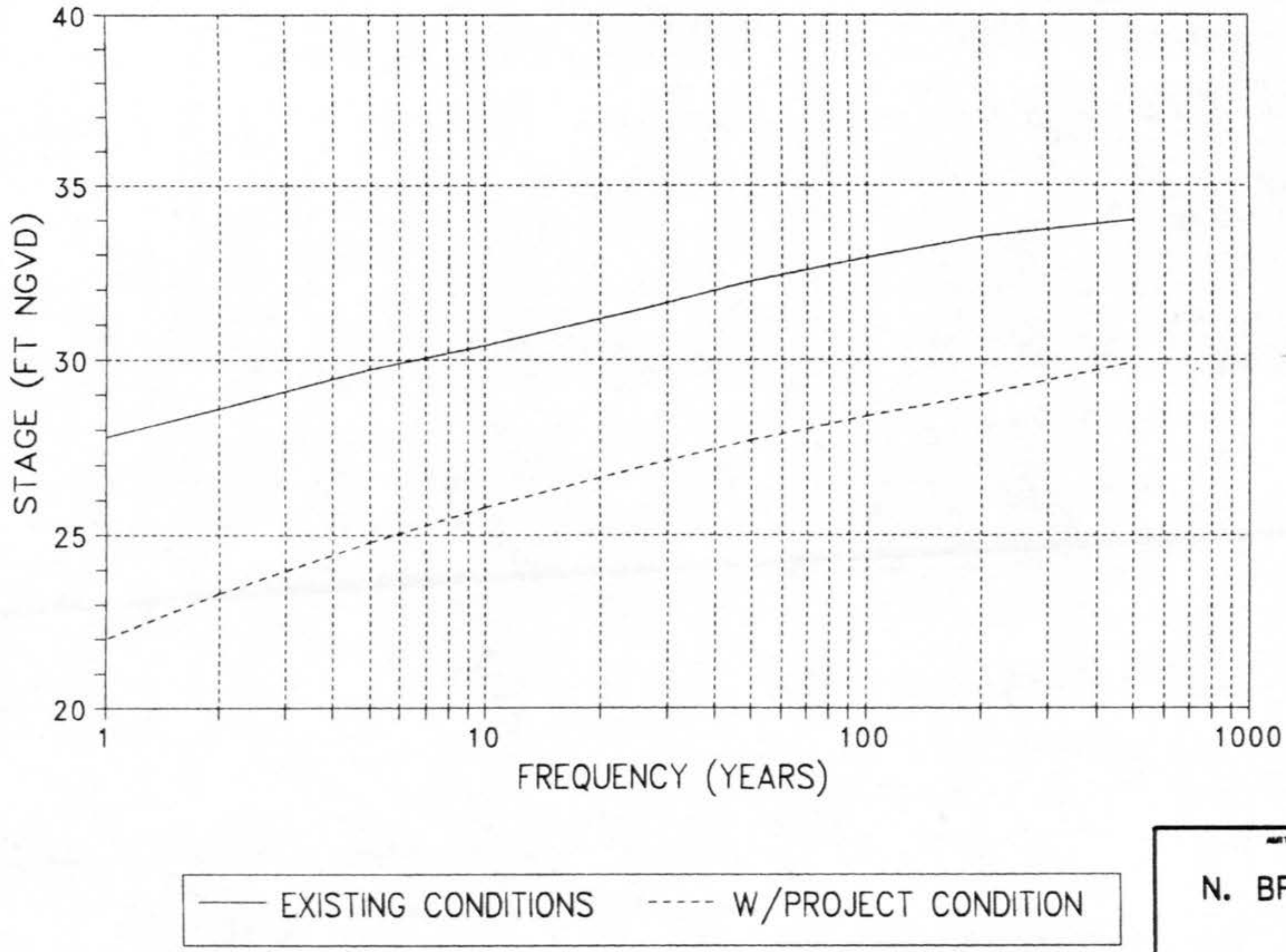


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU DUPLANTIER
AT LEE DRIVE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		



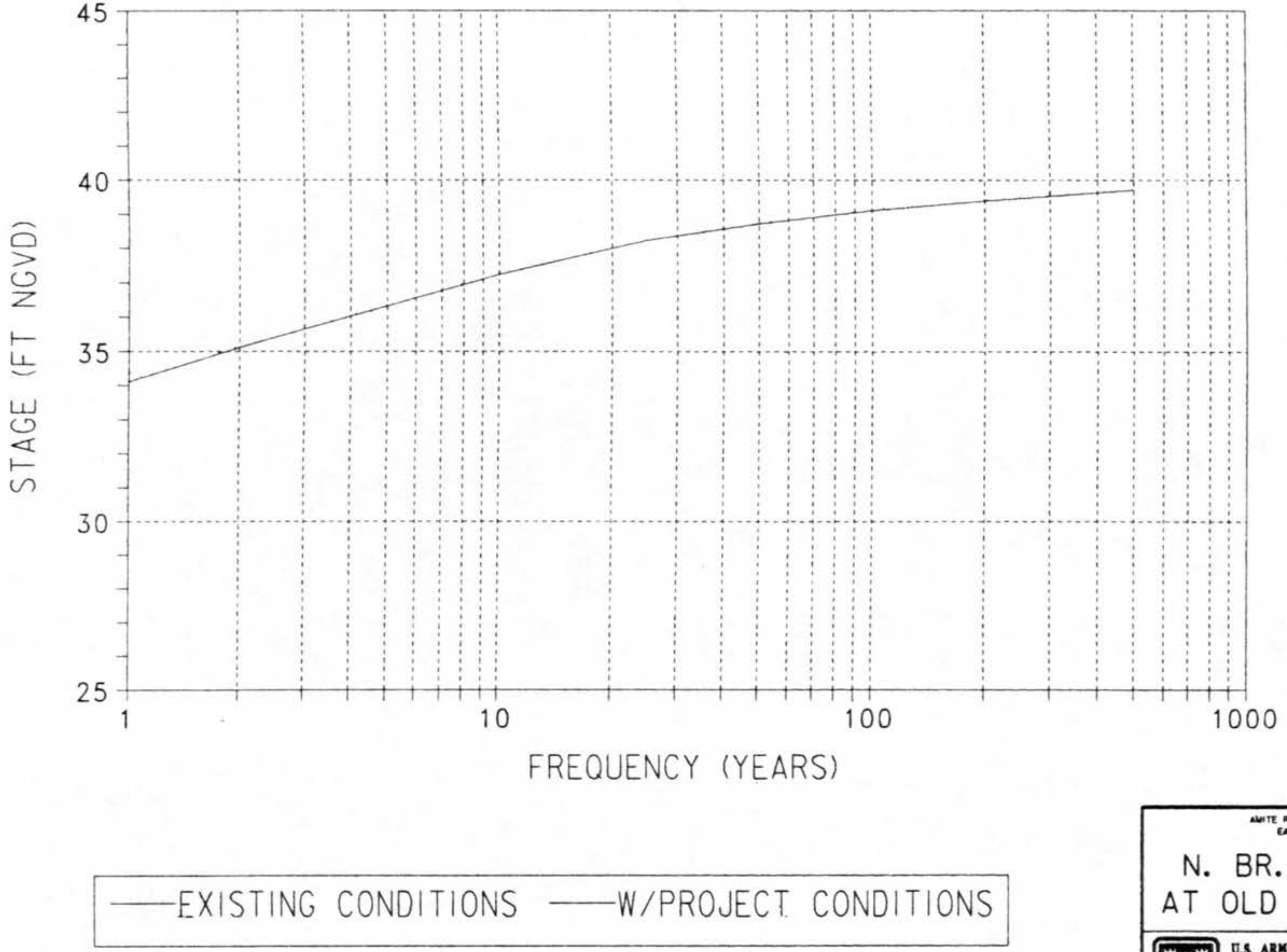
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

N. BR. WARD CREEK AT I-12

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		

PLATE C-63

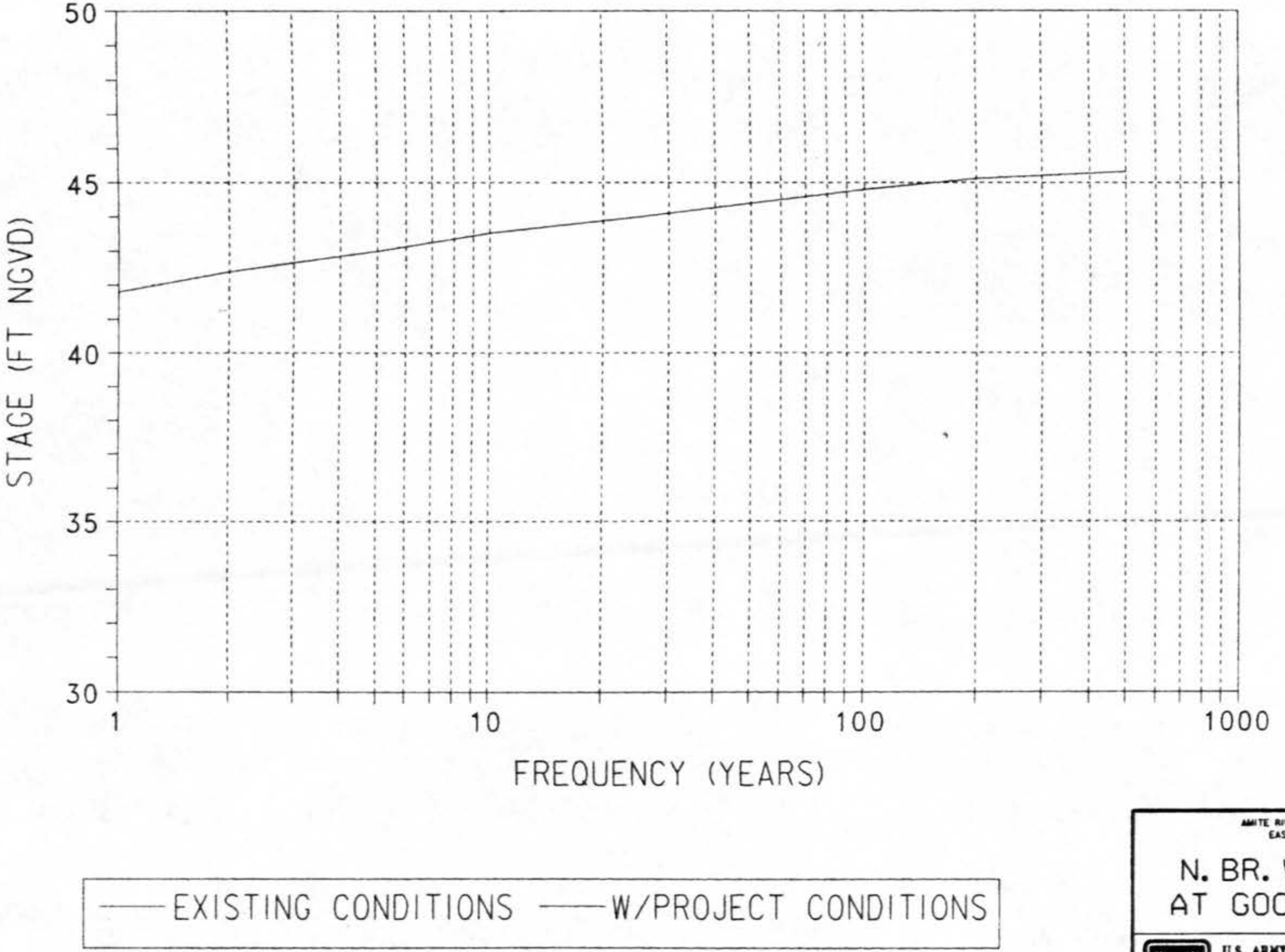


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

N. BR. WARD CREEK
AT OLD HAMMOND HWY.

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB			FILE NO. H-4-40273	
CHECKED BY: CES	DATE: AUGUST 1993			



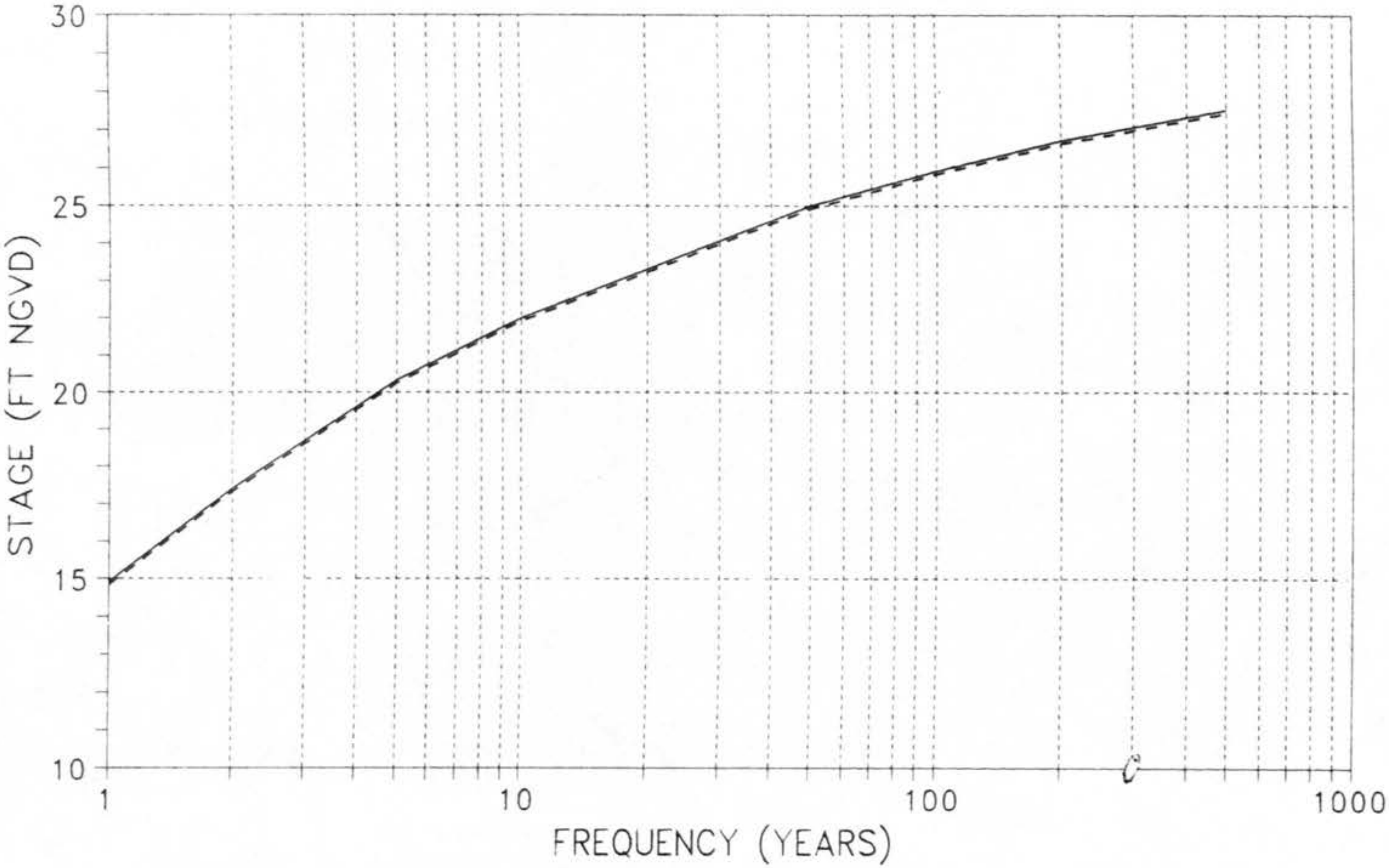
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

N. BR. WARD CREEK
AT GOODWOOD BLVD.

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB	NONE		FILE NO.
CHECKED BY:	CES	DATE: AUGUST 1993		H-4-40273

PLATE C-65



——	Existing Conditions w/o Comite River Diversion
- - -	Existing Conditions w/ Comite River Diversion

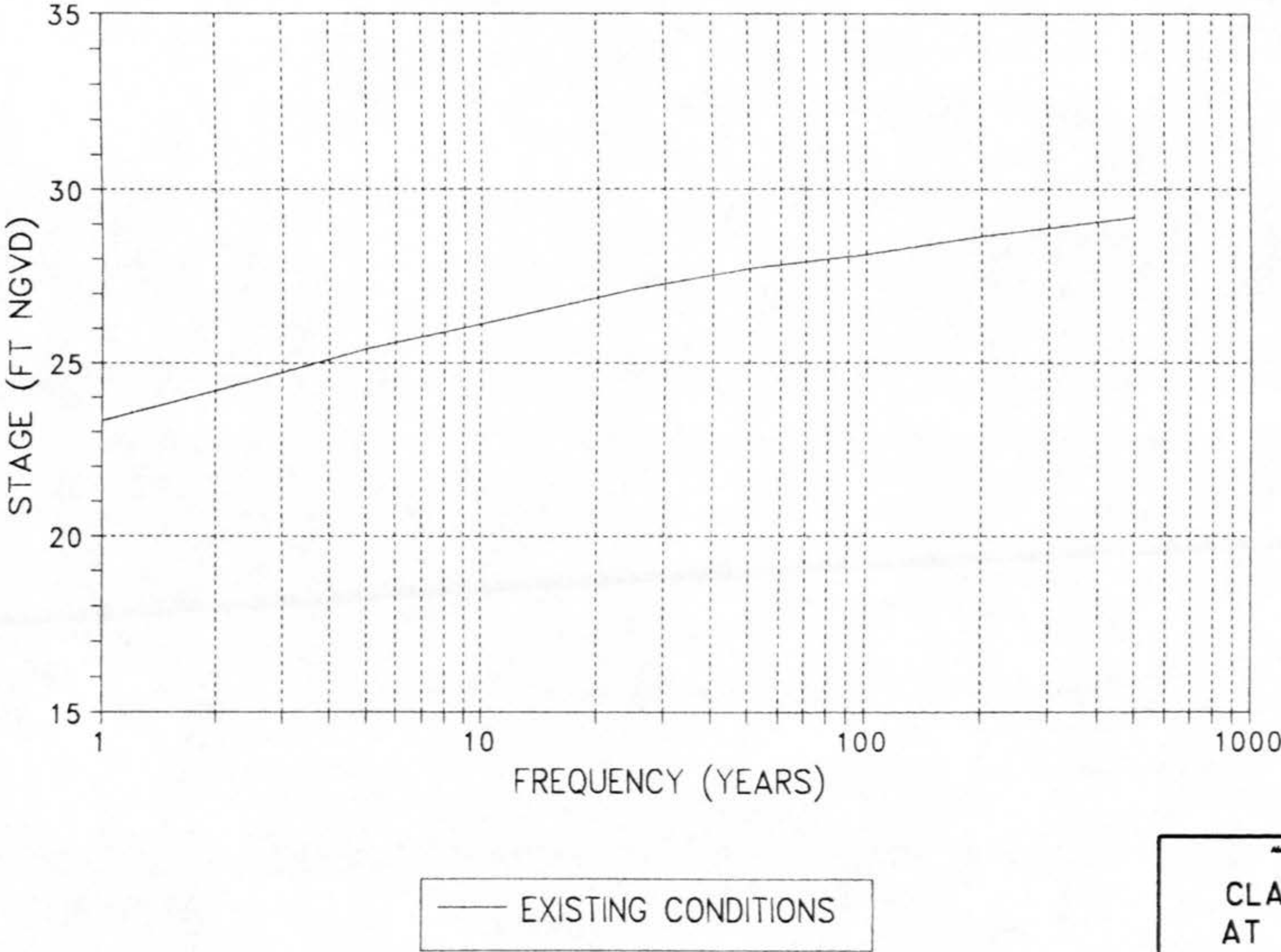
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

CLAY CUT BAYOU AT TIGER BEND ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		

PLATE C-66

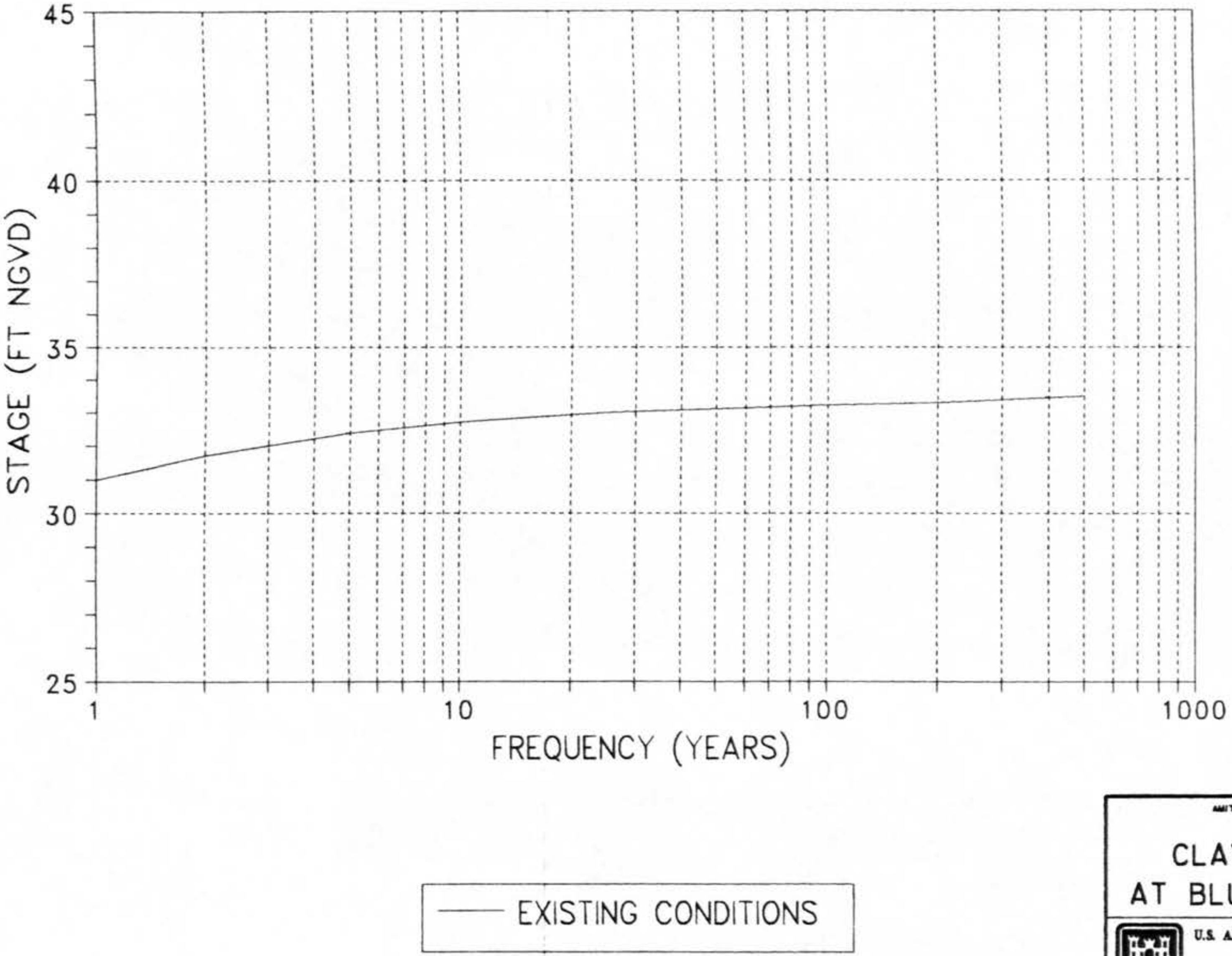


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

CLAY CUT BAYOU AT JACK'S BAYOU

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		

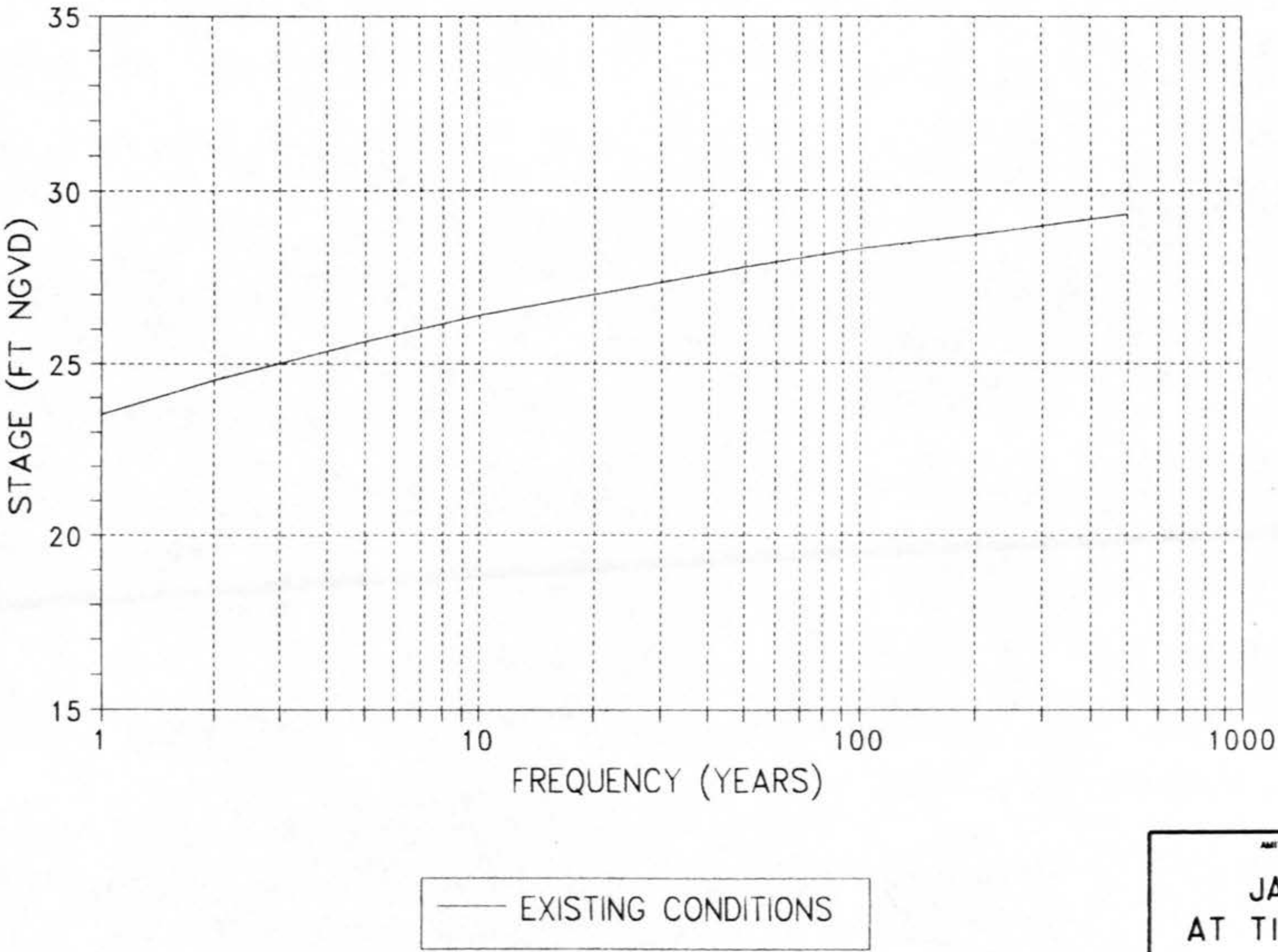


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

CLAY CUT BAYOU AT BLUEBONNET DRIVE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

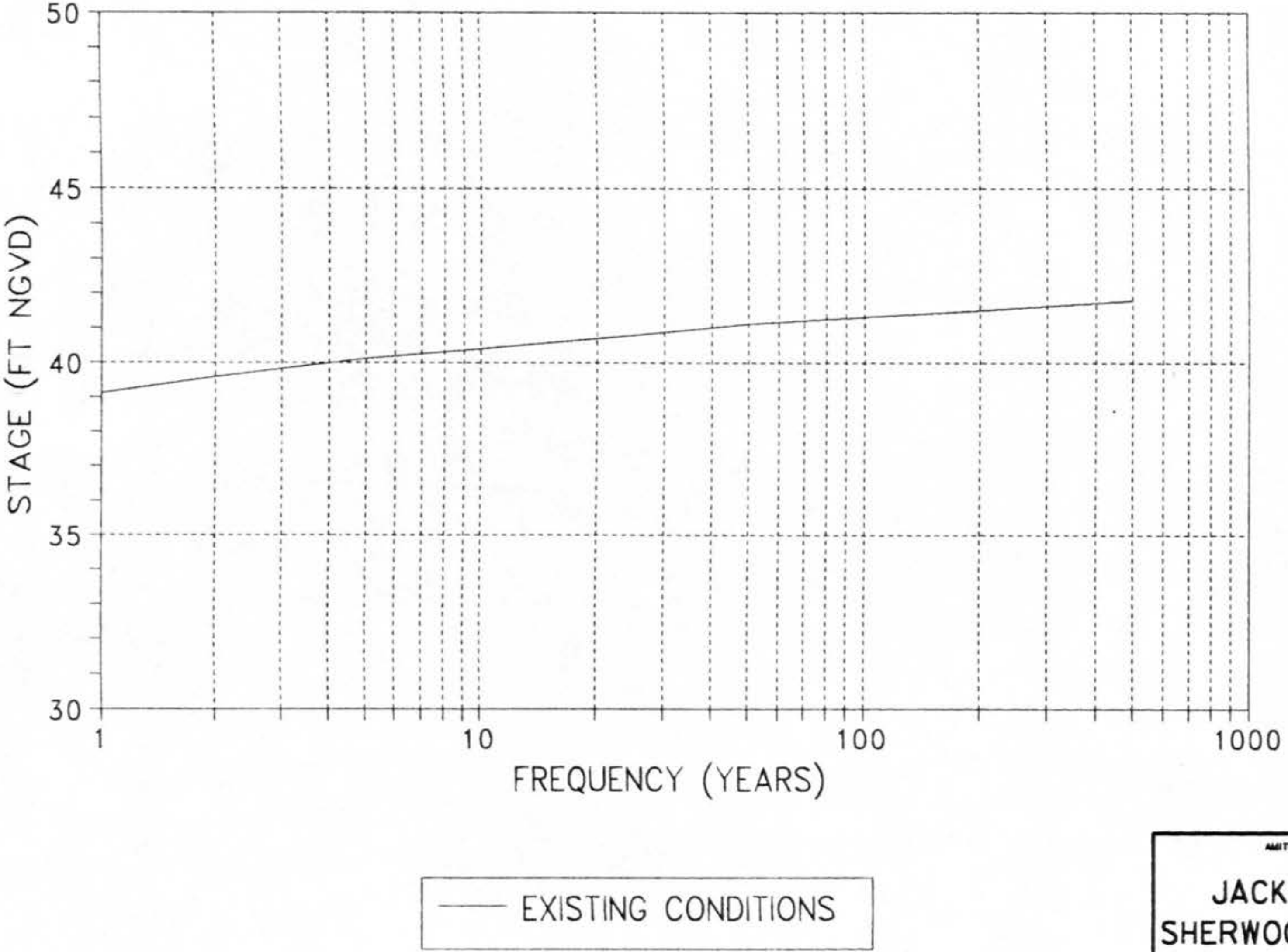


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JACK'S BAYOU AT TIGER BEND ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

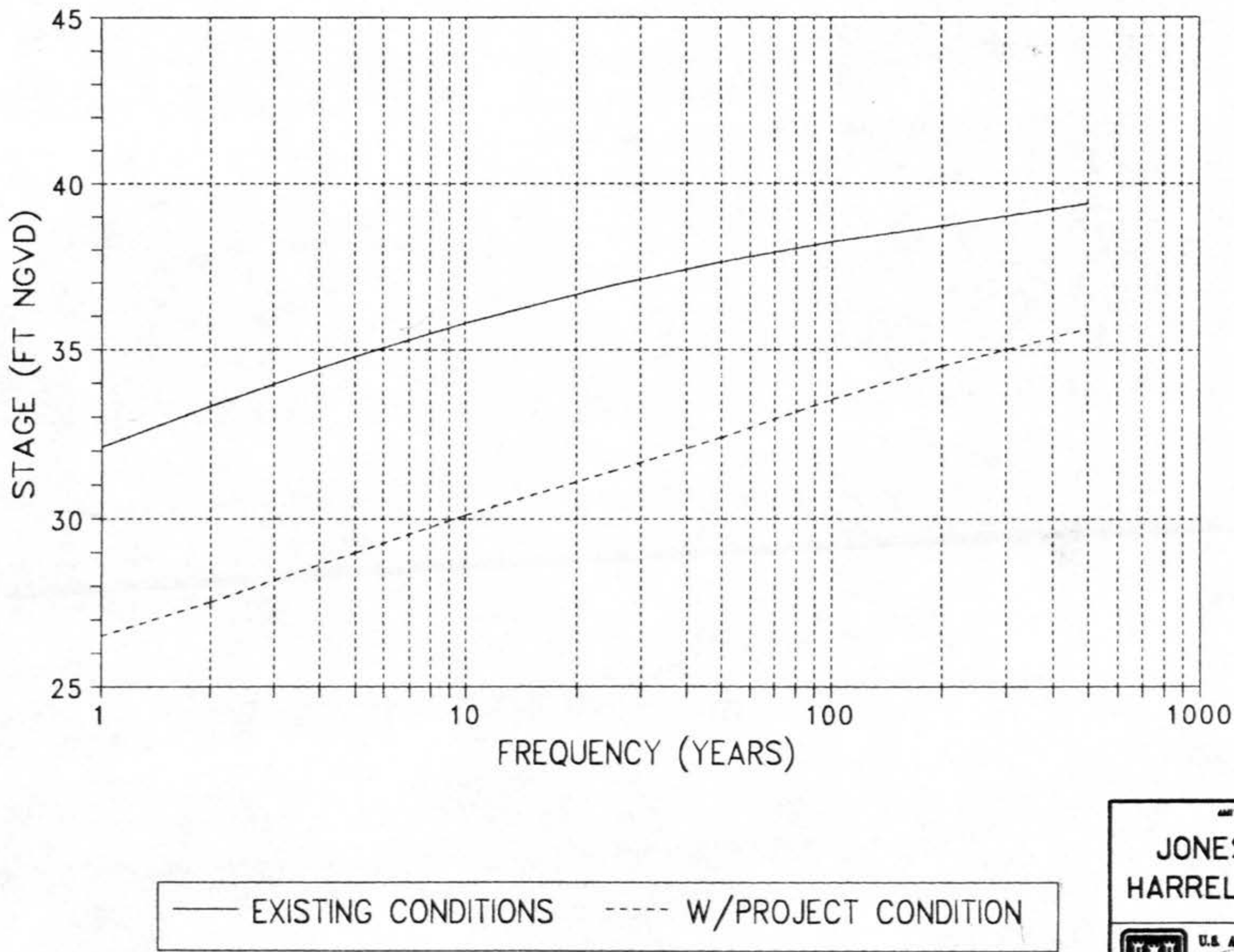


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JACK'S BAYOU AT SHERWOOD FOREST BLVD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		



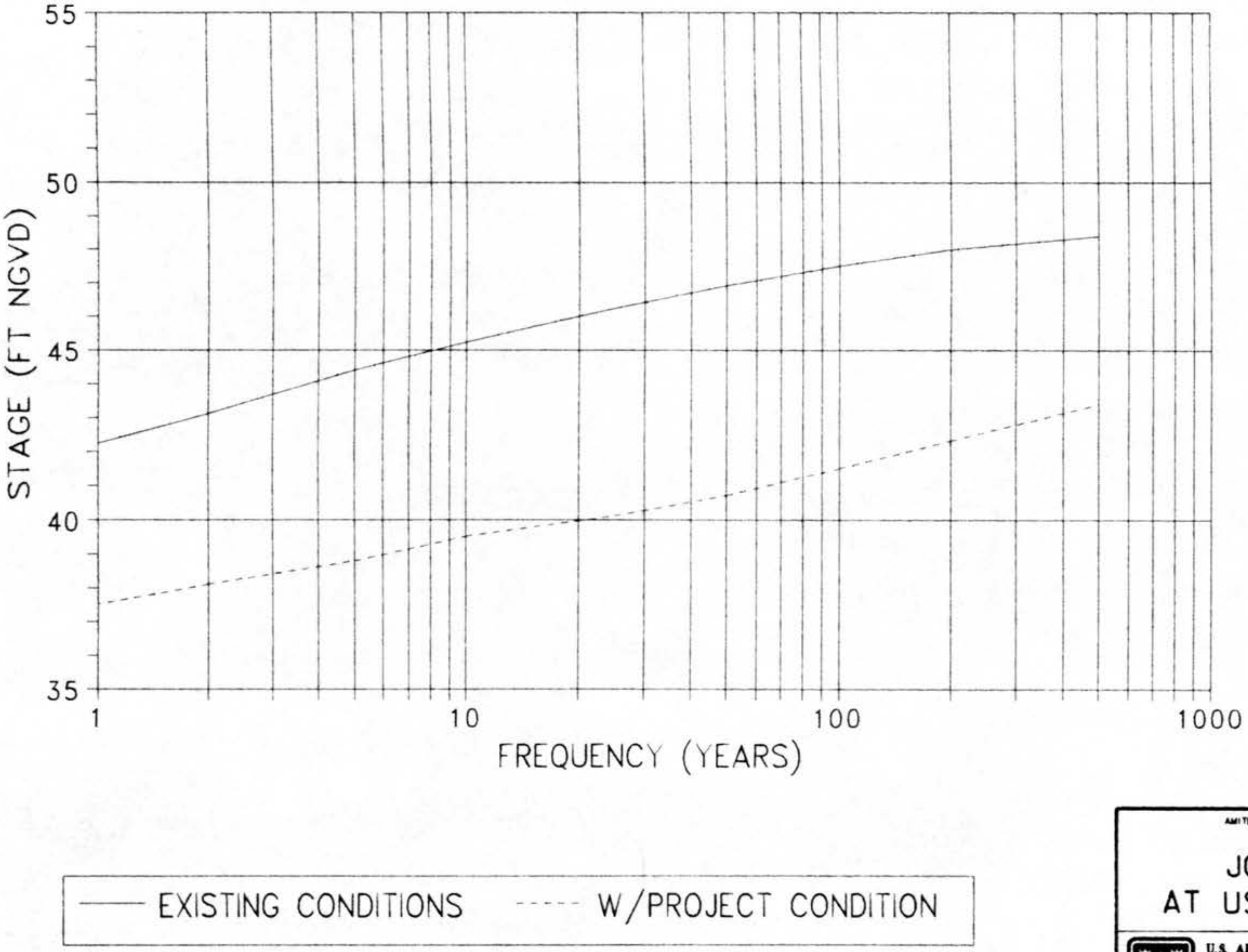
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES CREEK AT S. HARRELL'S FERRY ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB	NONE		FILE NO.	
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273	

PLATE C-71

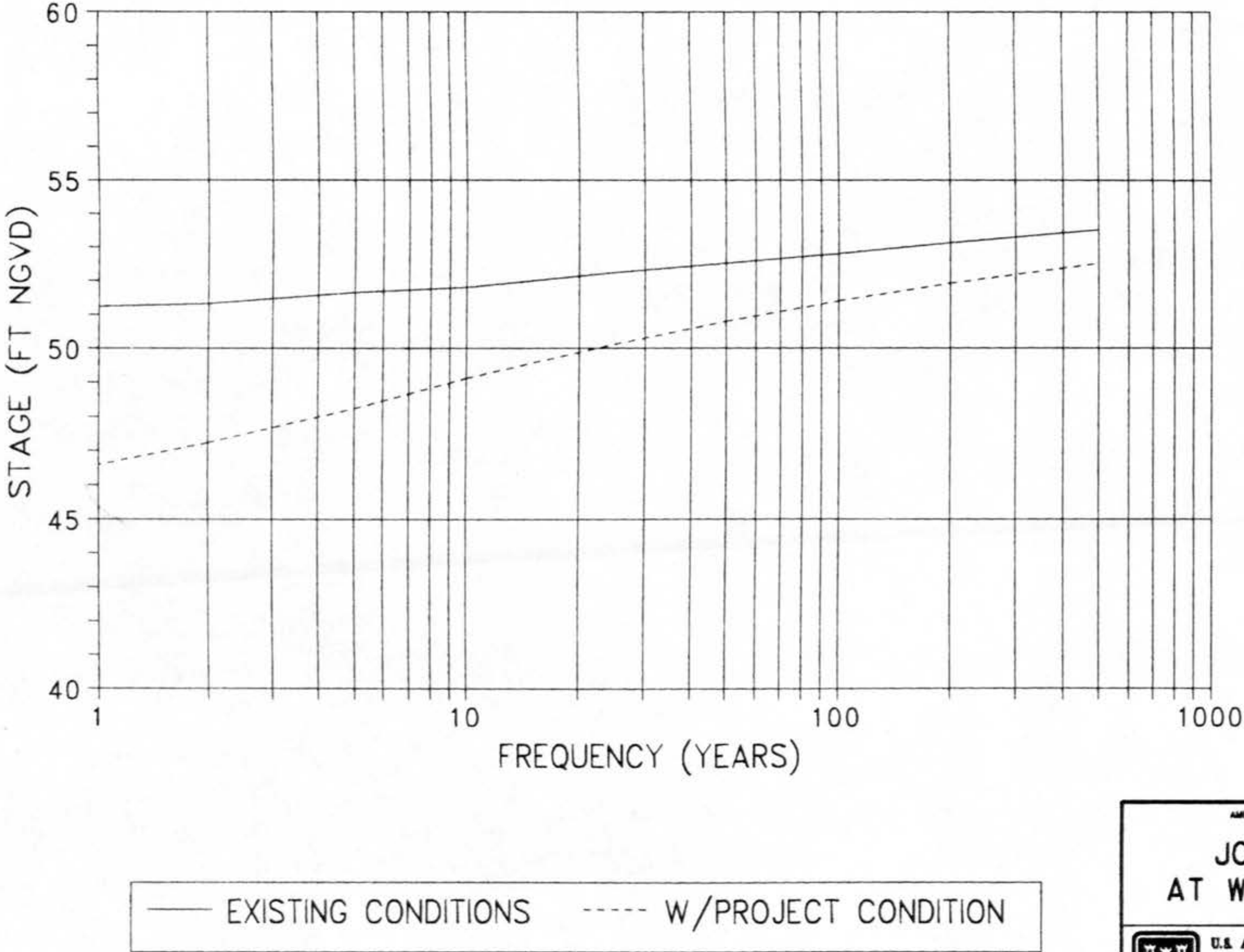


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES CREEK AT US HIGHWAY 190

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY: CJB	NONE		FILE NO.
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273

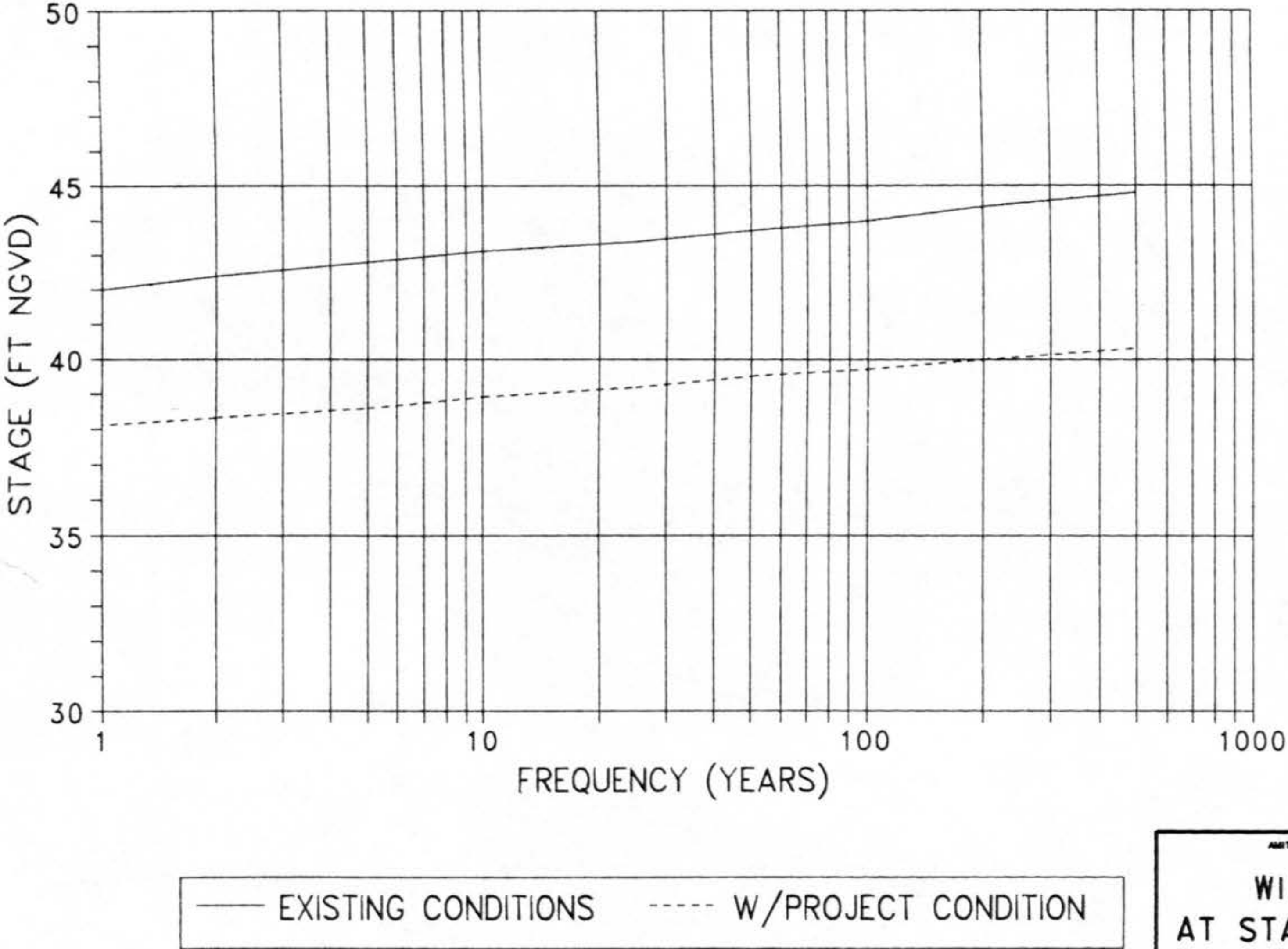


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES CREEK
AT WOODLAKE BLVD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB	NONE		FILE NO.	
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273	

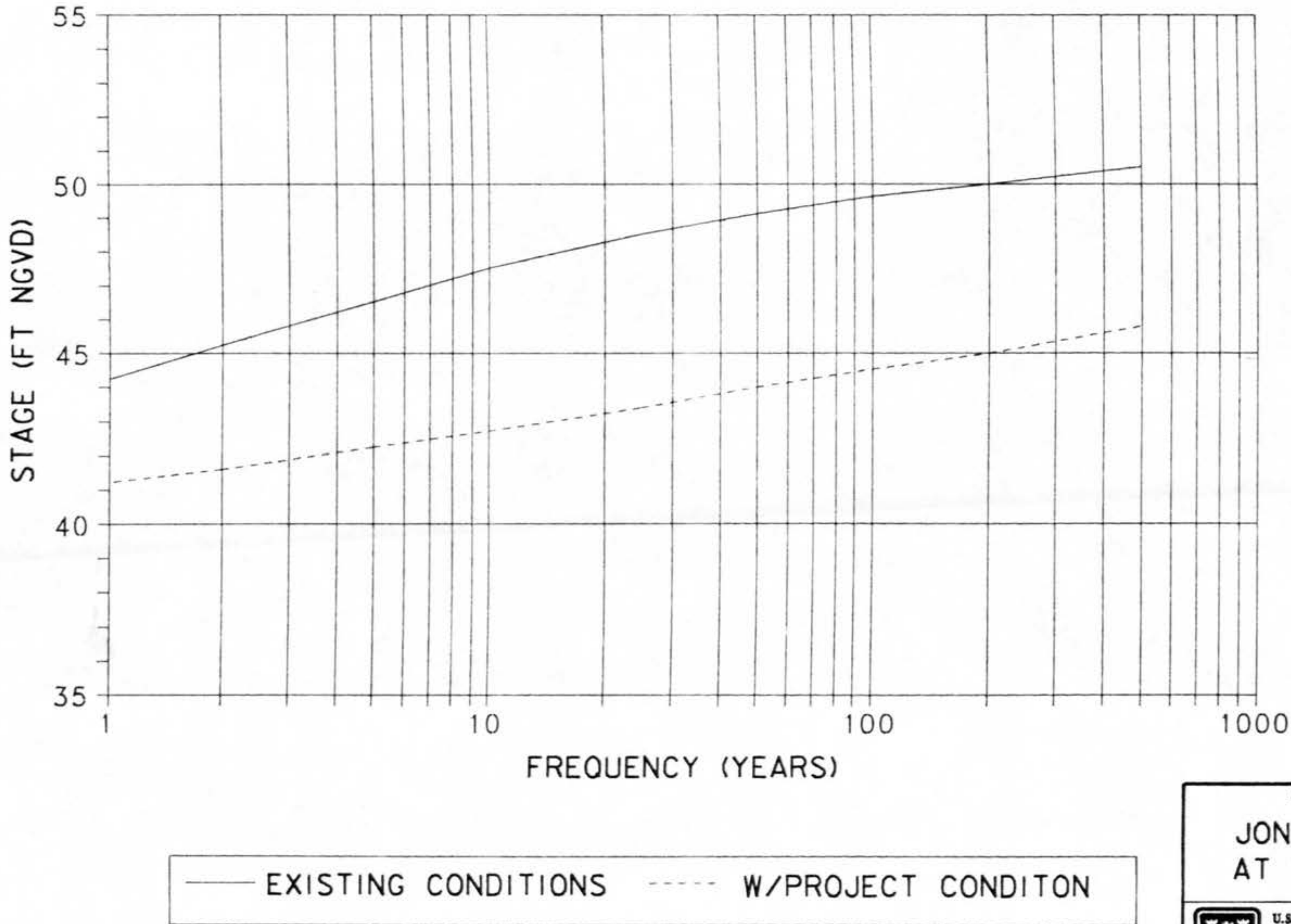


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WIENER CREEK AT STANLEY AUBIN LN.

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		

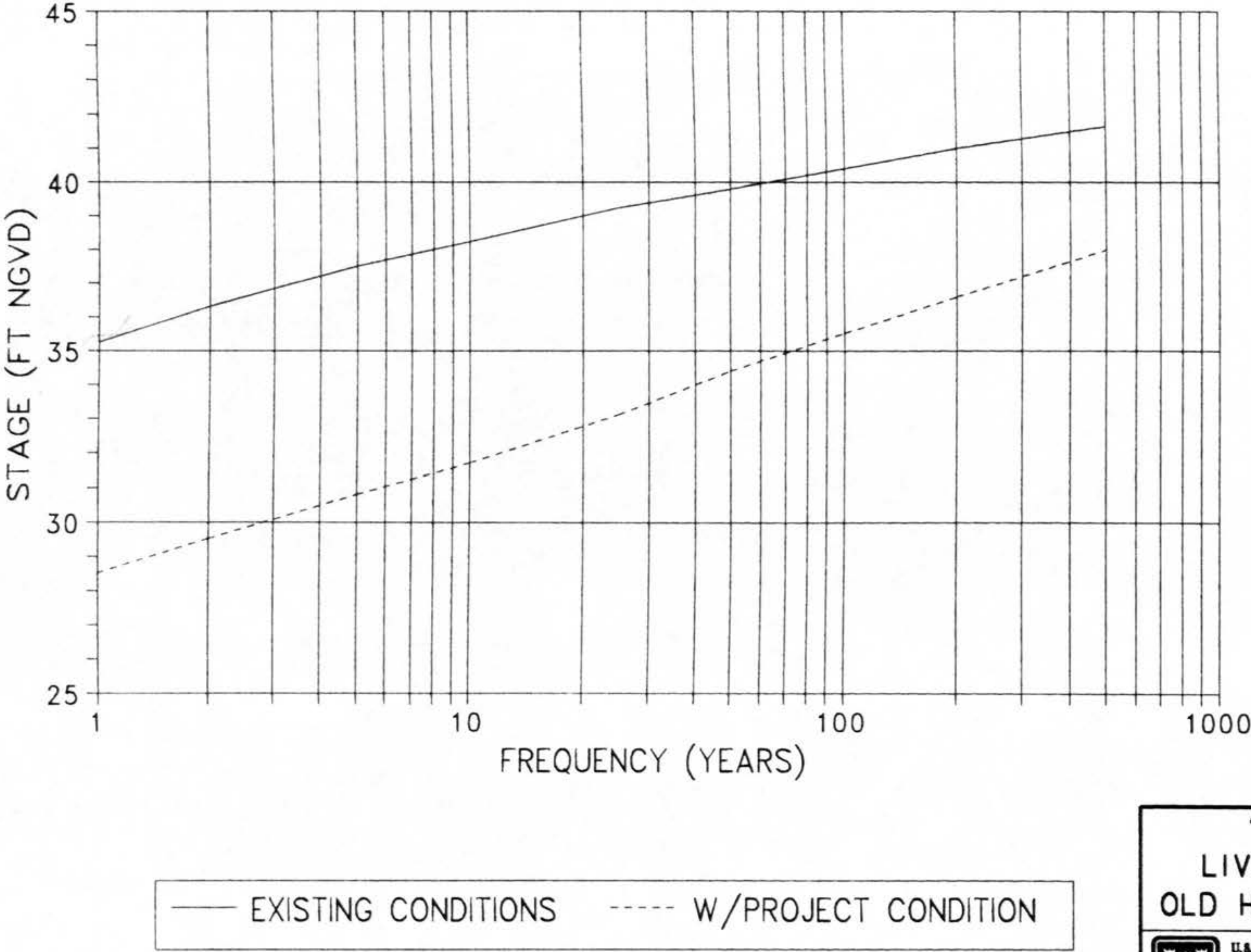


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES CREEK TRIB. AT W. TAMS DRIVE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: SEPT. 1994		

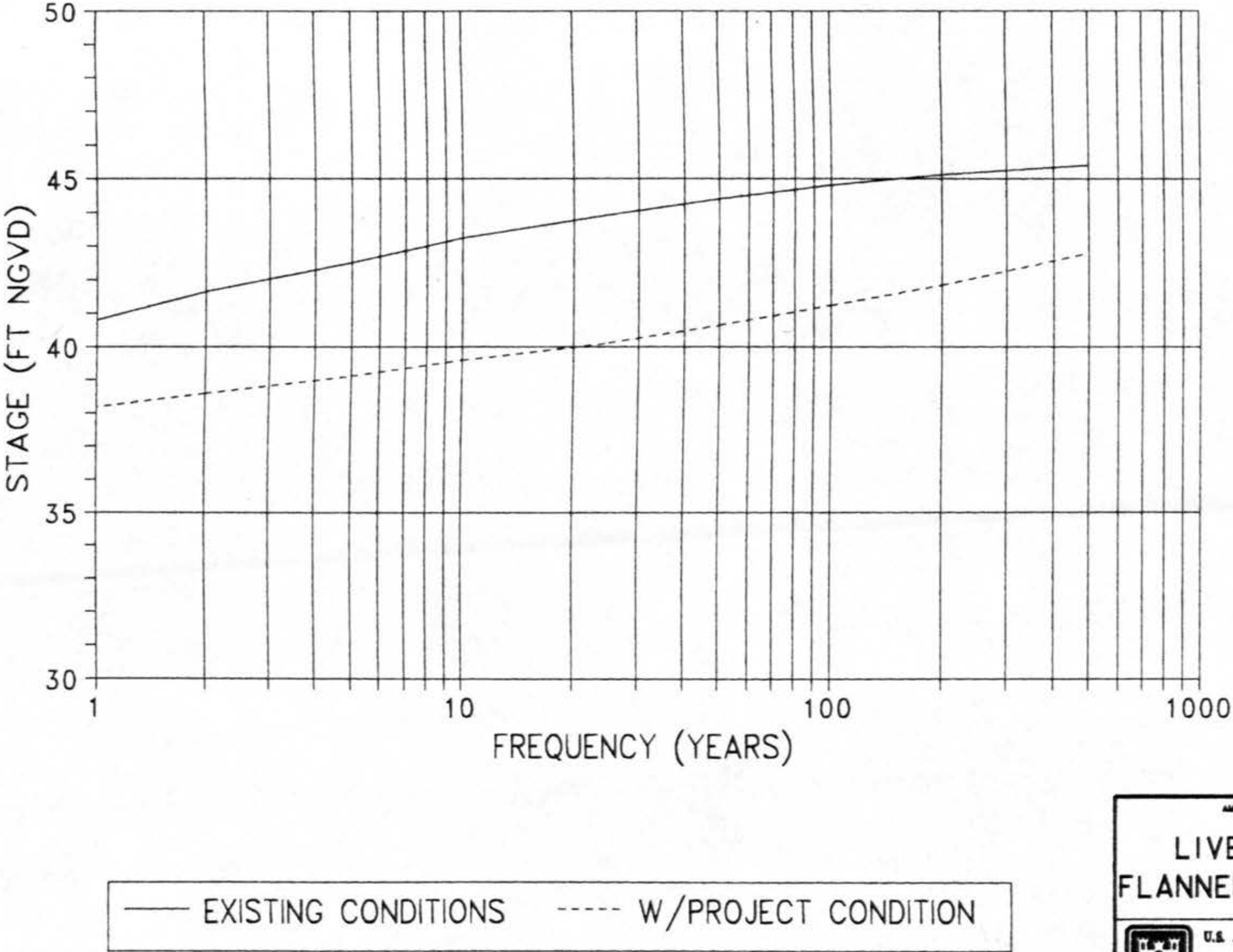


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

LIVELY BAYOU AT OLD HAMMOND HIGHWAY

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		



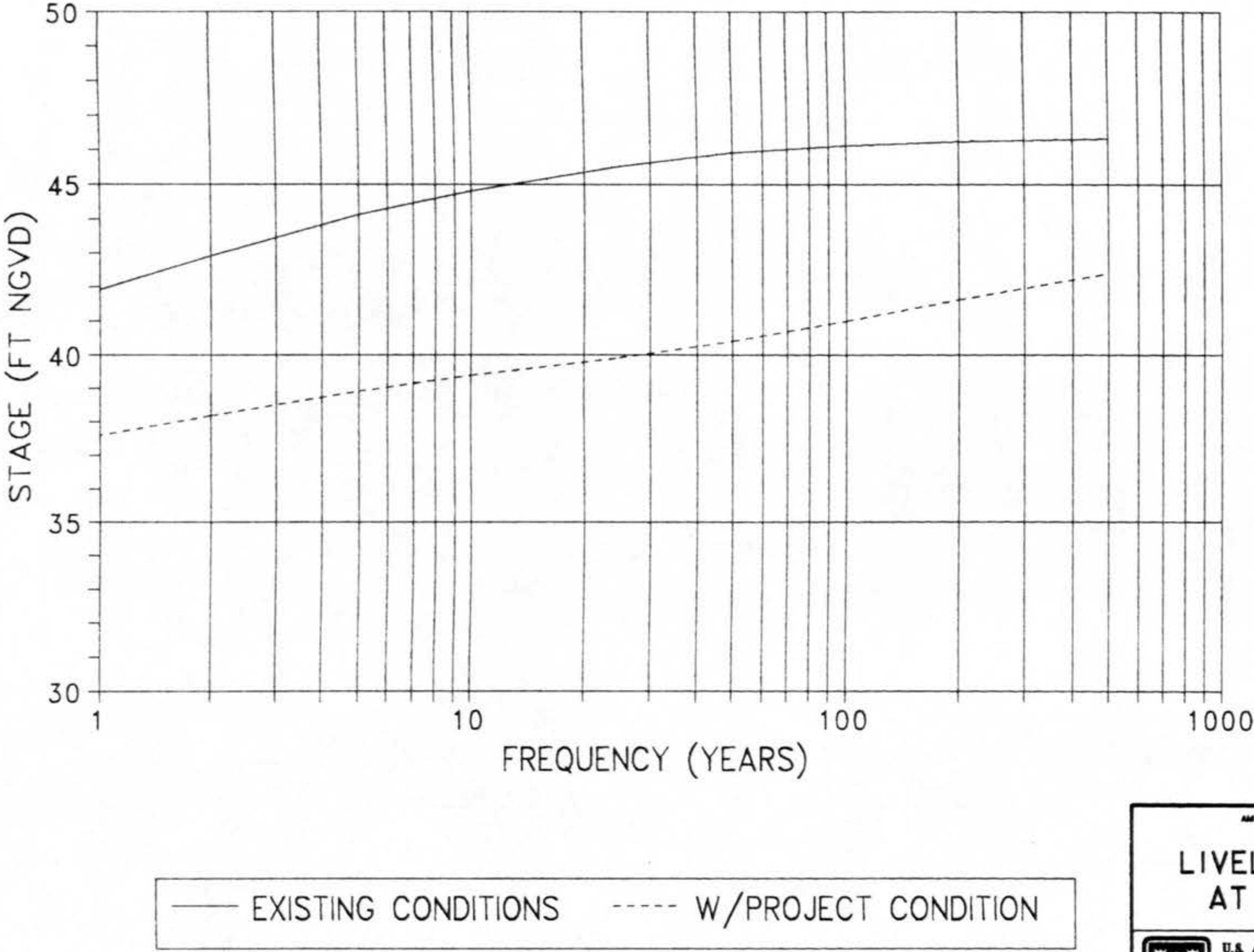
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

LIVELY BAYOU AT FLANNERY RD NR ILC RR

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

PLATE C-77

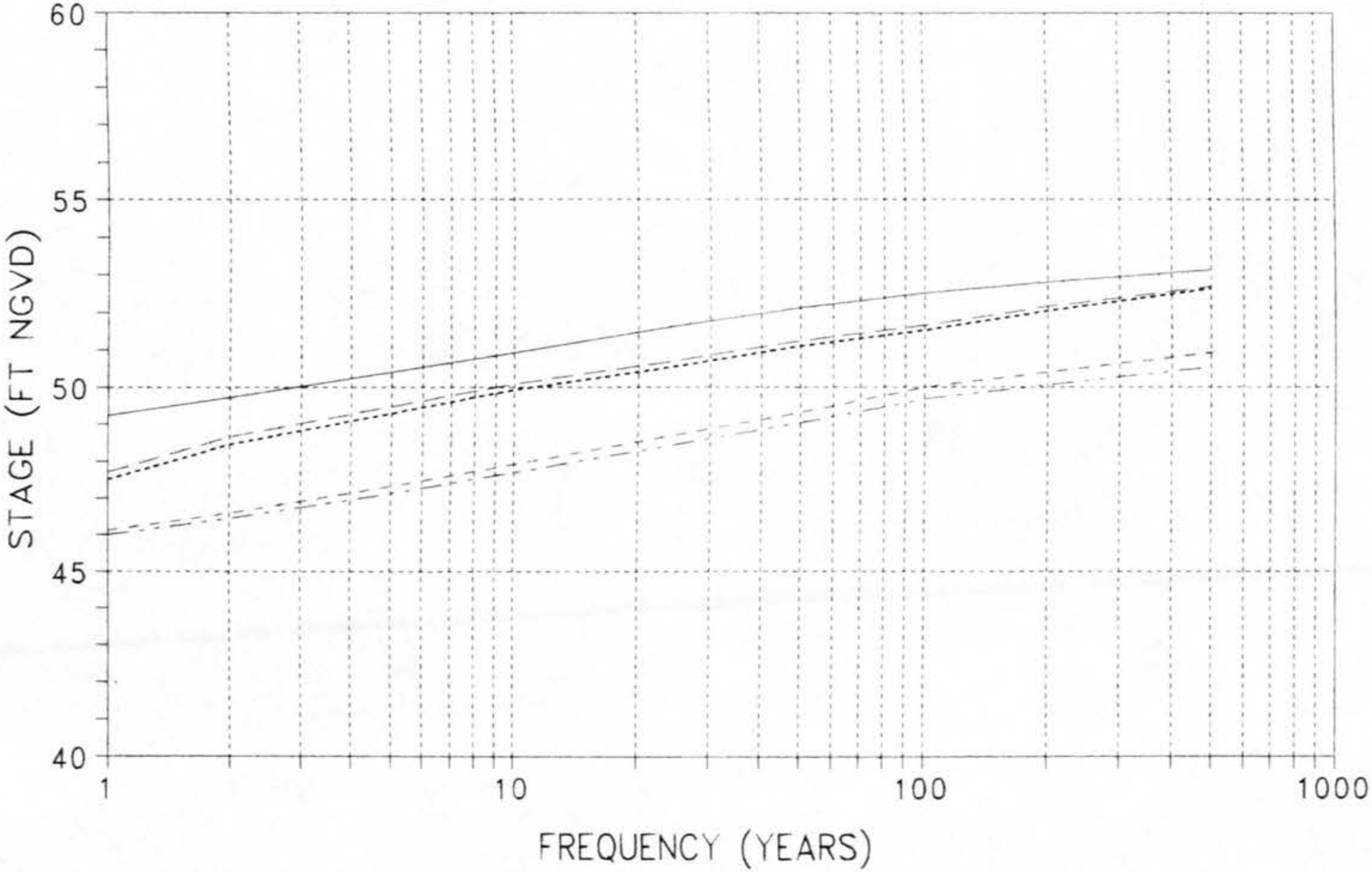


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

LIVELY BAYOU TRIB. AT US HWY I 90

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY: CJB	NONE		FILE NO.
CHECKED BY: CES	DATE: AUGUST 1995		H-4-40273



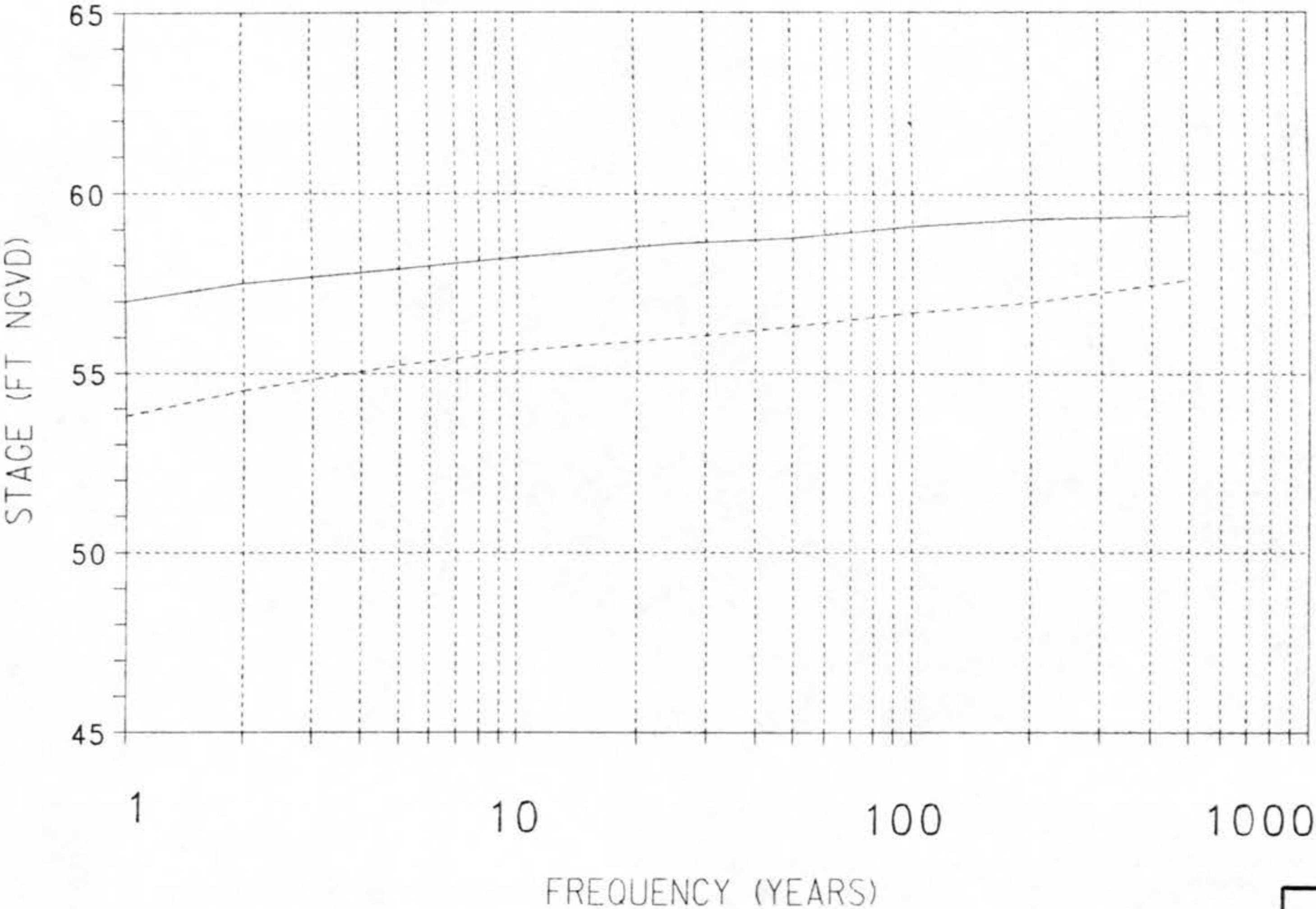
———	Existing Conditions (Pre-Phase 1A) w/o Comite River Diversion
- - -	Existing Conditions (Phase 1A) w/o Comite River Diversion
·······	Existing Conditions (Phase 1A) w/ Comite River Diversion
- - -	Project Conditions w/o Comite River Diversion
—···	Project Conditions w/ Comite River Diversion

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BEAVER BAYOU AT GREENWELL SPRING ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB
DRAWN BY: CJB
CHECKED BY: CES
PLOT SCALE: NONE
PLOT DATE:
DATE: AUGUST 1993
CADD FILE:
FILE NO. H-4-40273

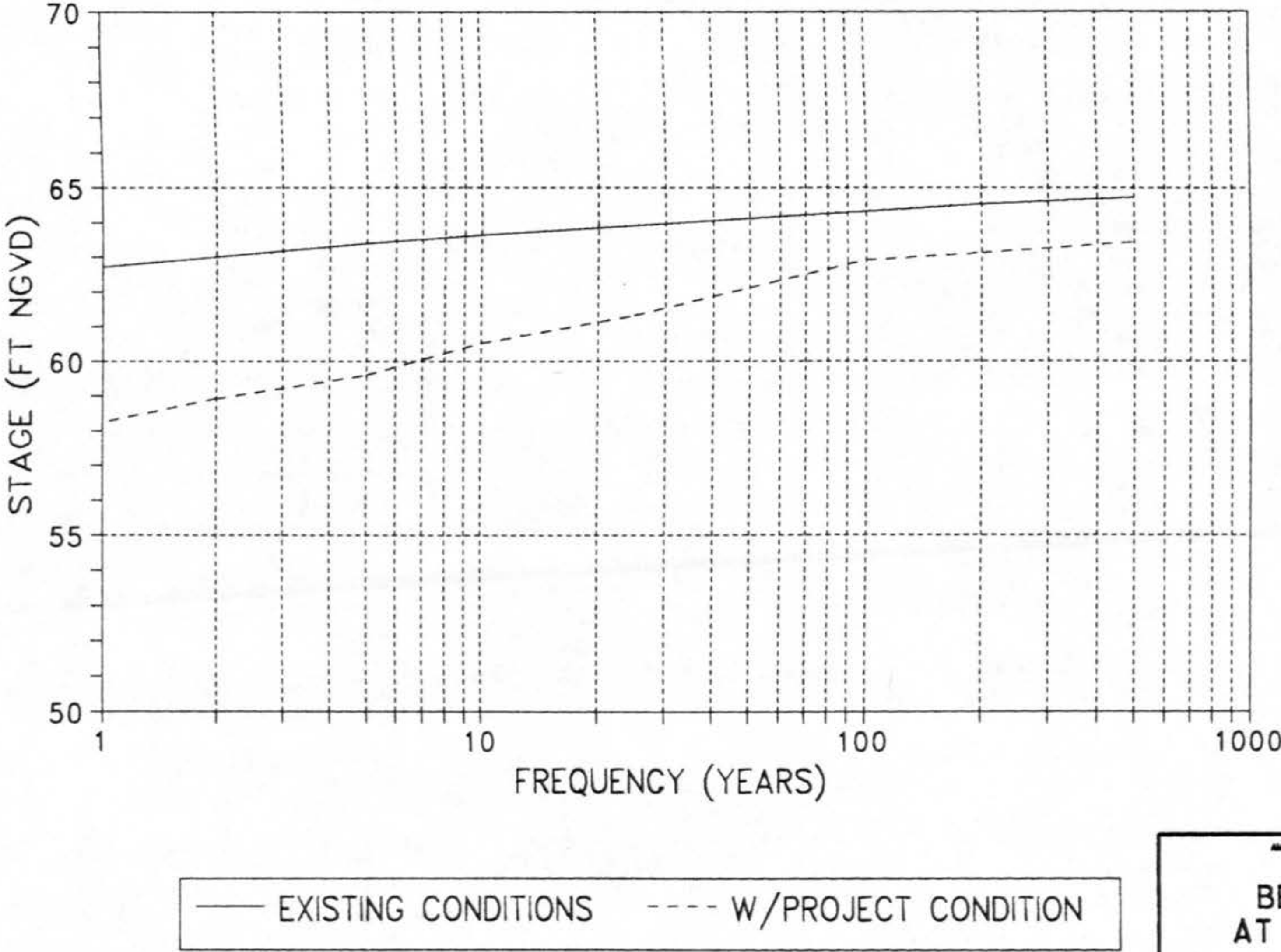


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BEAVER BAYOU AT WAX LAKE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		

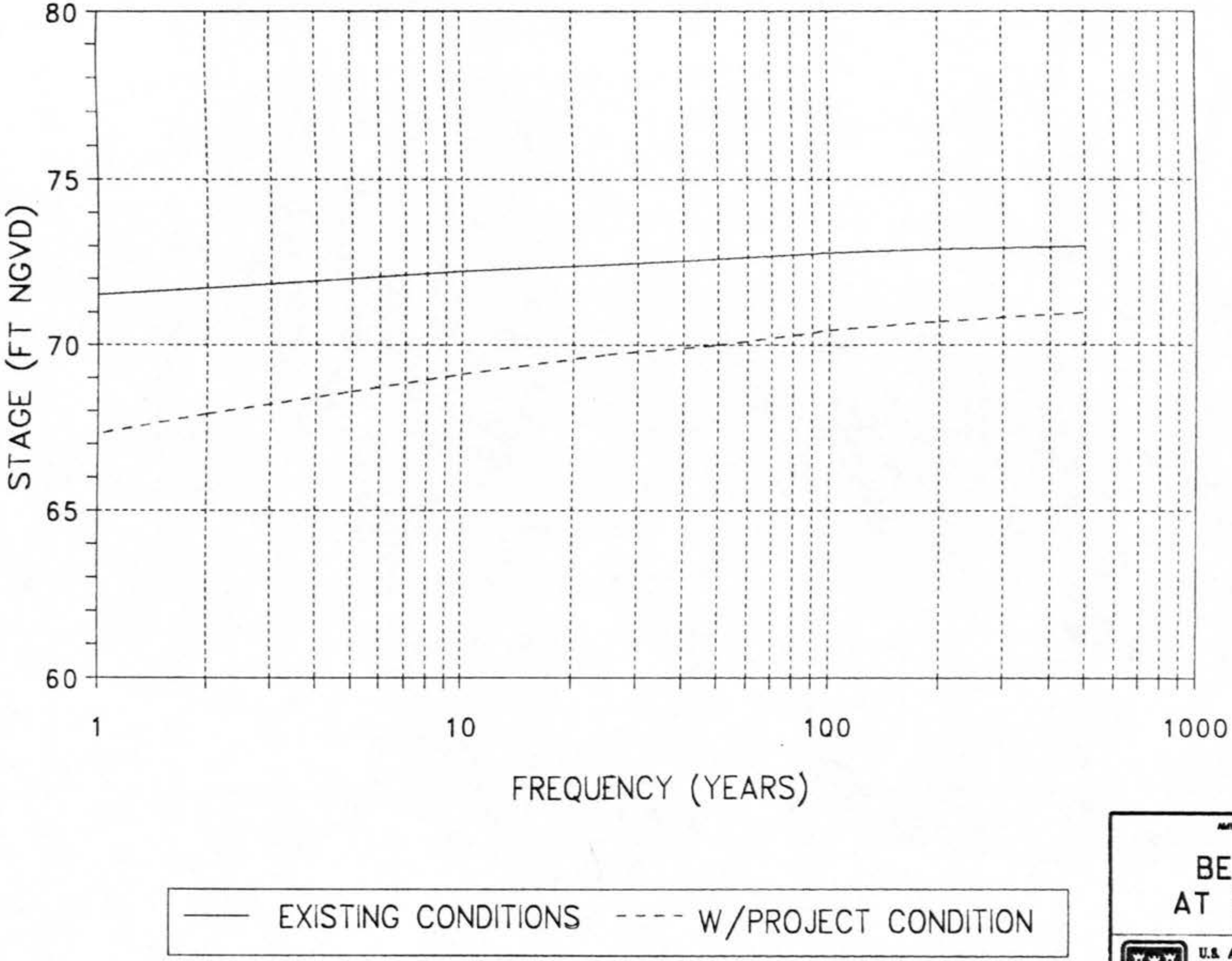


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BEAVER BAYOU
AT HOOPER ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		

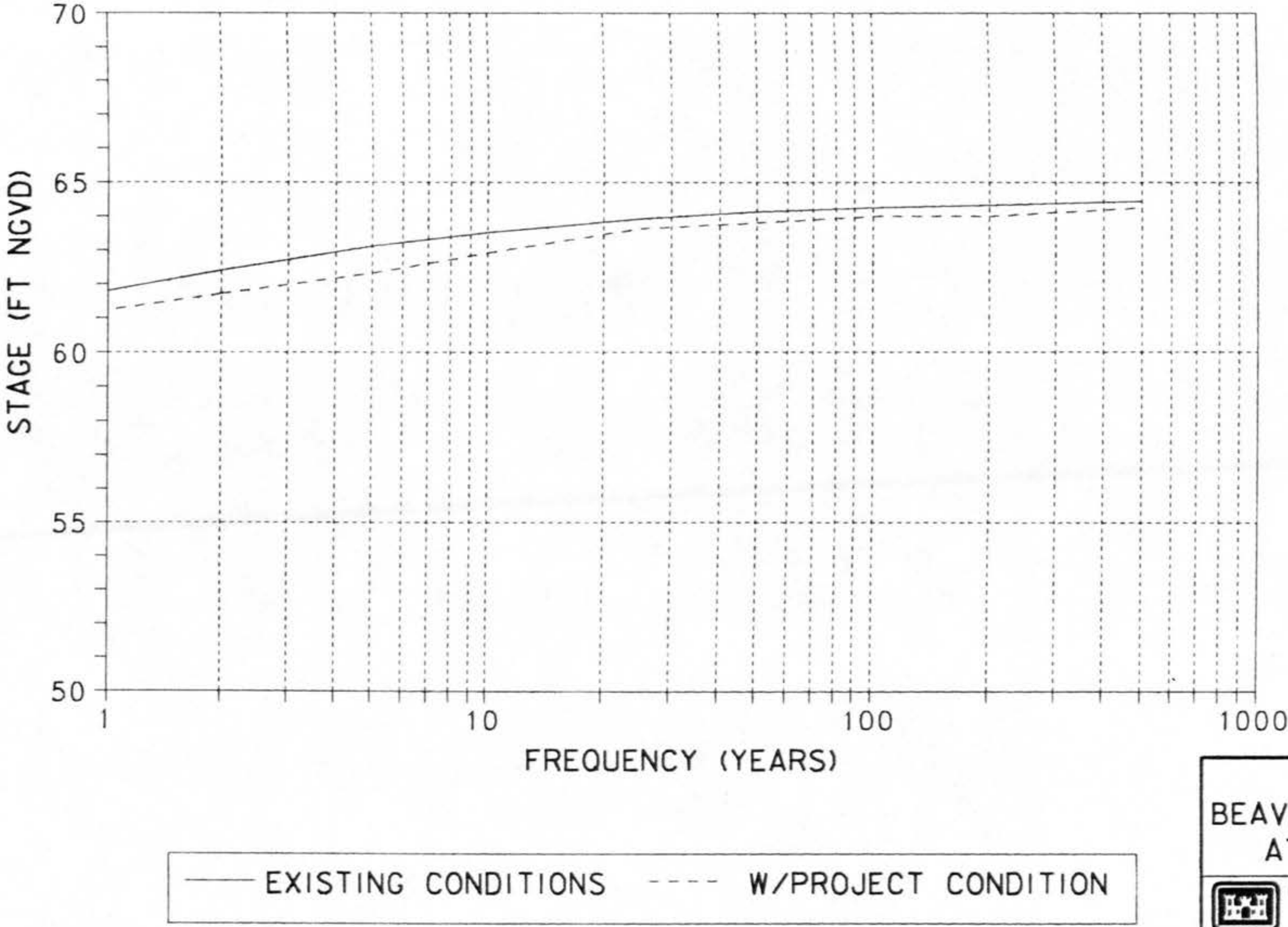


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BEAVER BAYOU AT DENHAM ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		



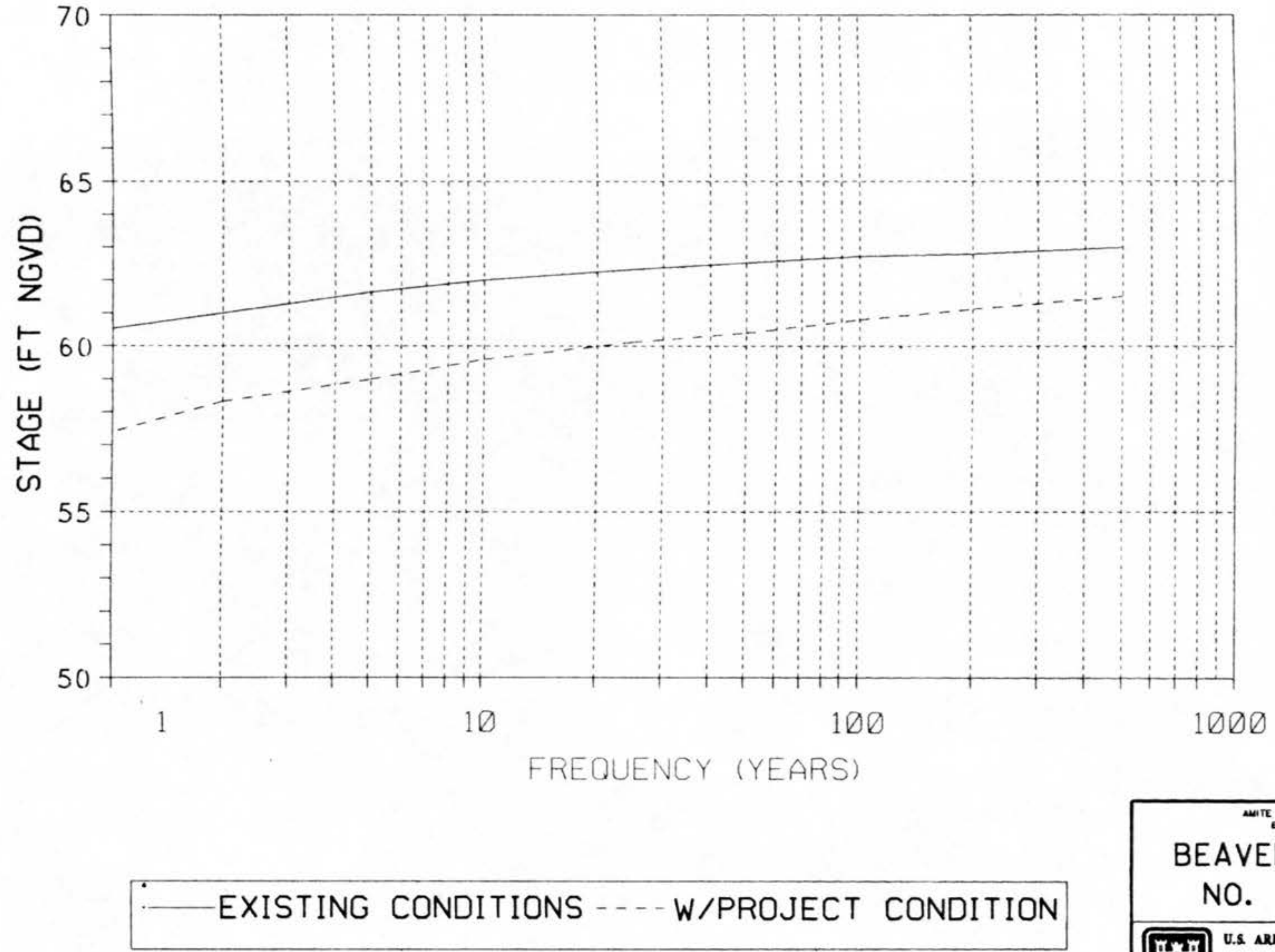
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BEAVER BAYOU LATERAL
AT DEVALL ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB	NONE		FILE NO.
CHECKED BY:	CES	DATE: SEPT. 1994		H-4-40273

Plate



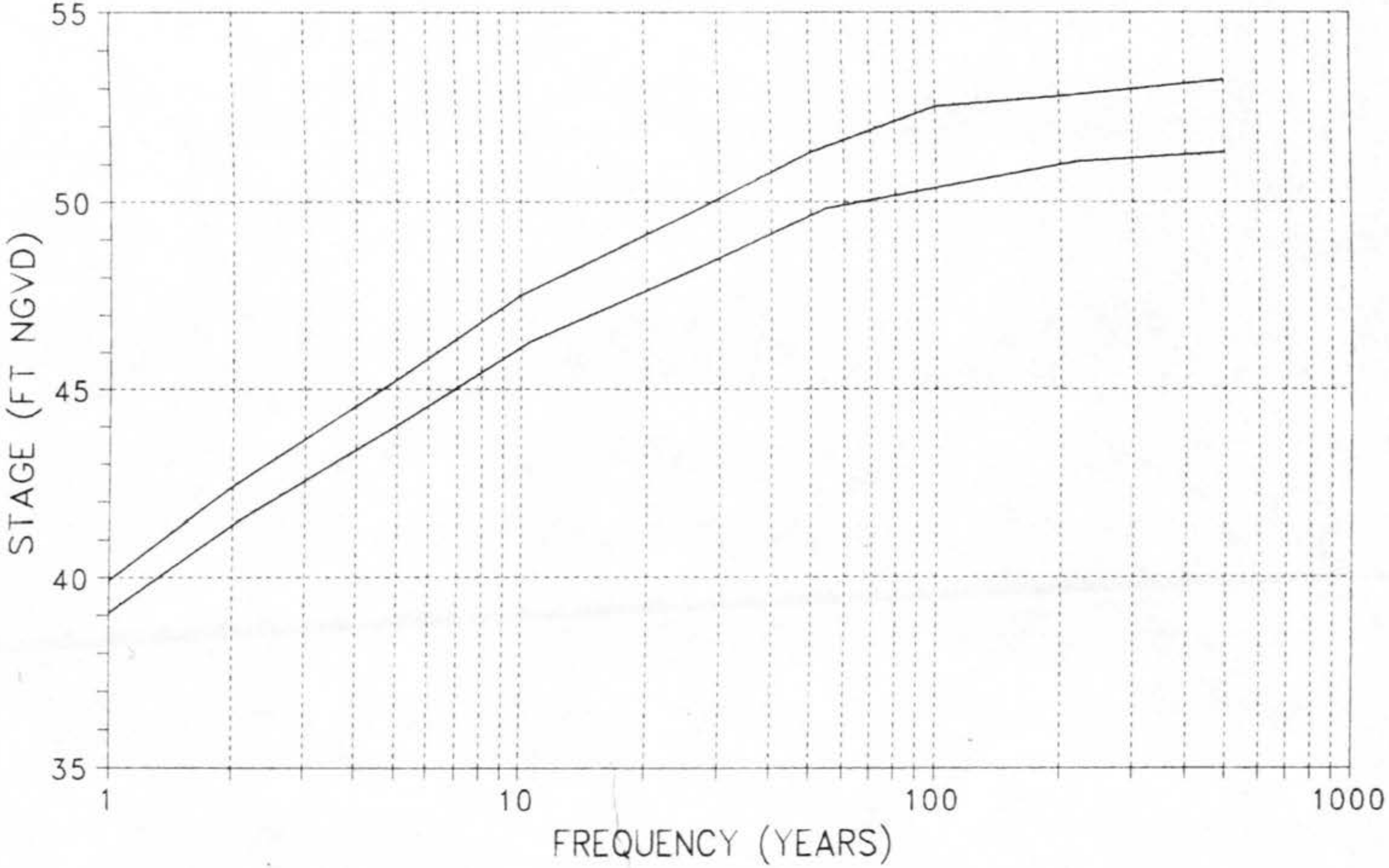
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BEAVER BAYOU TRIB. NO. 2 AT MOUTH

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB DRAWN BY: CJB CHECKED BY: CES	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	FILE NO. H-4-40273
	DATE: SEPT. 1994			

Plate



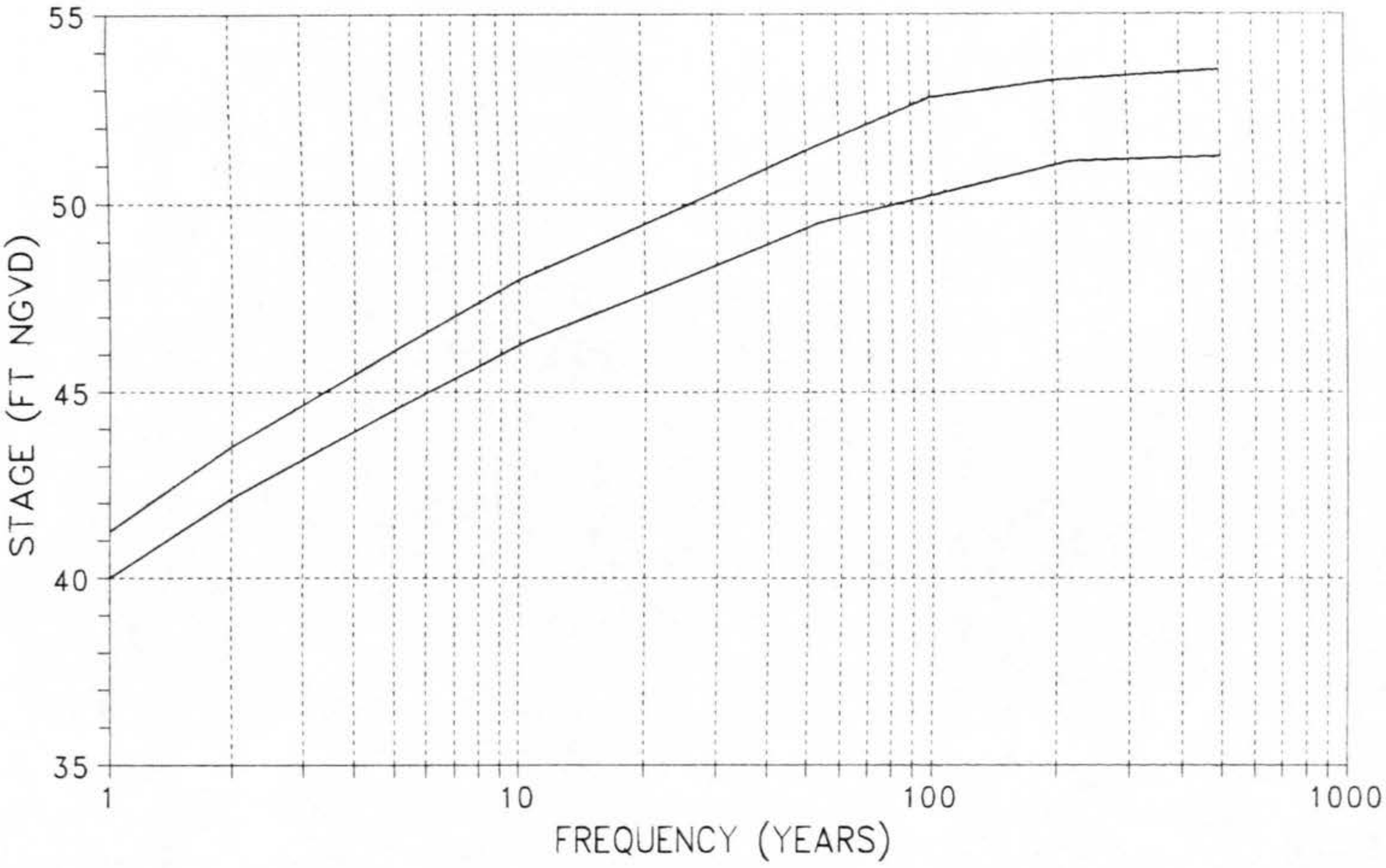
— Existing Conditions w/o Comite River Diversion
--- Existing Conditions w/ Comite River Diversion

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

HURRICANE CREEK AT JOOR ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		



— Existing Conditions w/o Comite River Diversion

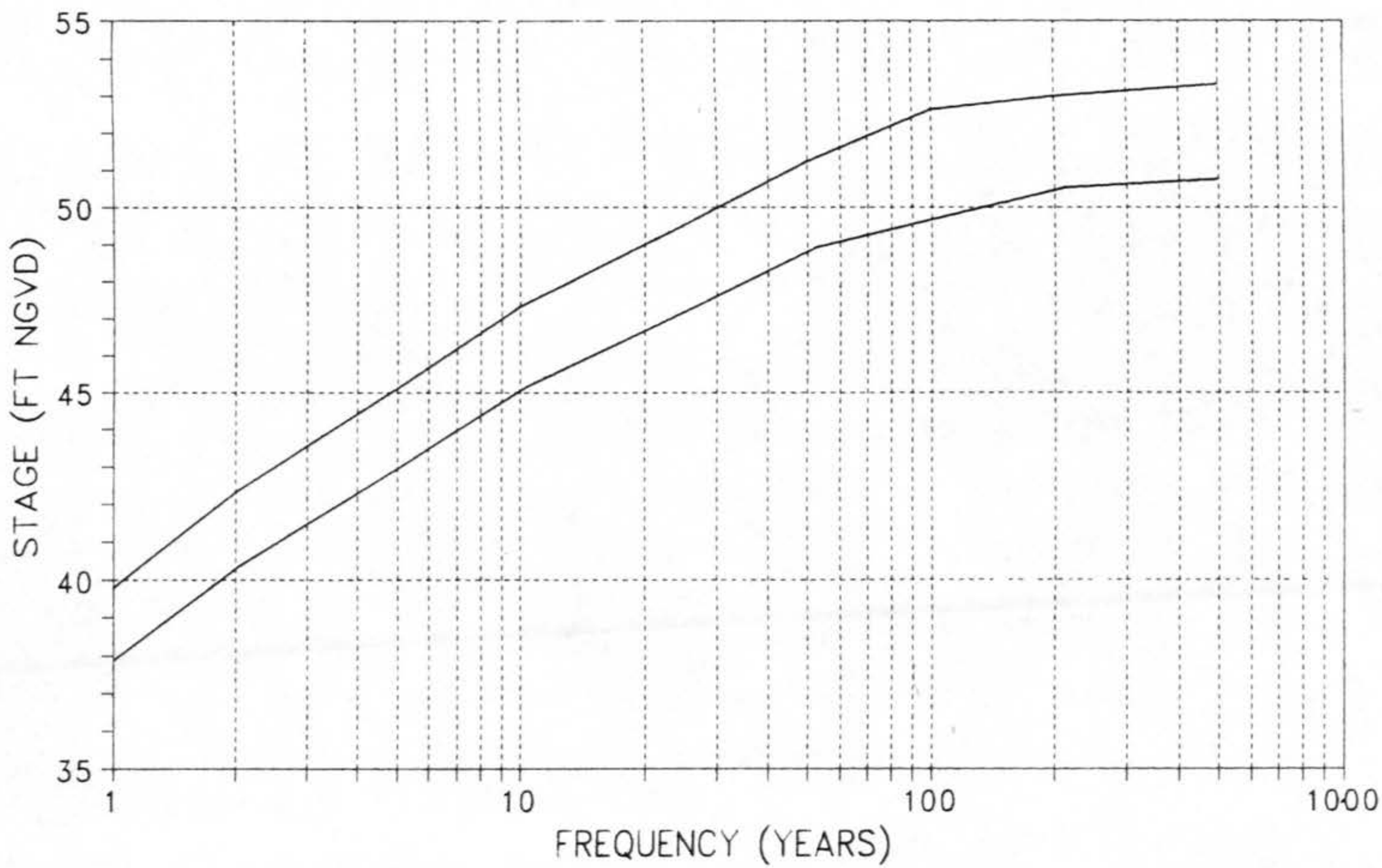
--- Existing Conditions w/ Comite River Diversion

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

HURRICANE CREEK AT VICTORIA DRIVE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB			FILE NO.	
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273	



— Existing Conditions w/o Comite River Diversion
--- Existing Conditions w/ Comite River Diversion

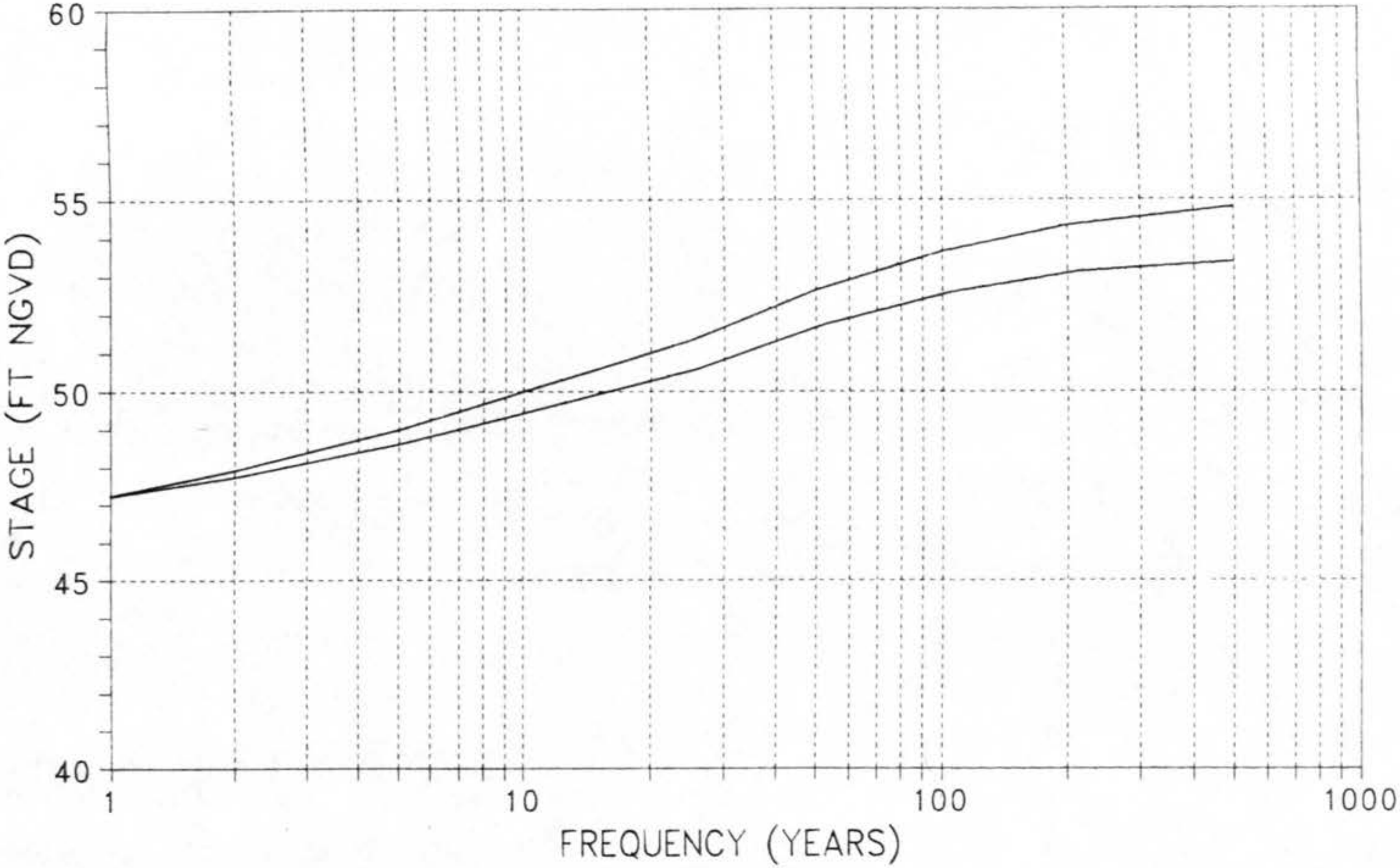
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

ROBERT CANAL AT JOOR ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB		PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY: CJB		NONE		FILE NO.
CHECKED BY: CES		DATE: AUGUST 1993		H-4-40273

PLATE C-87



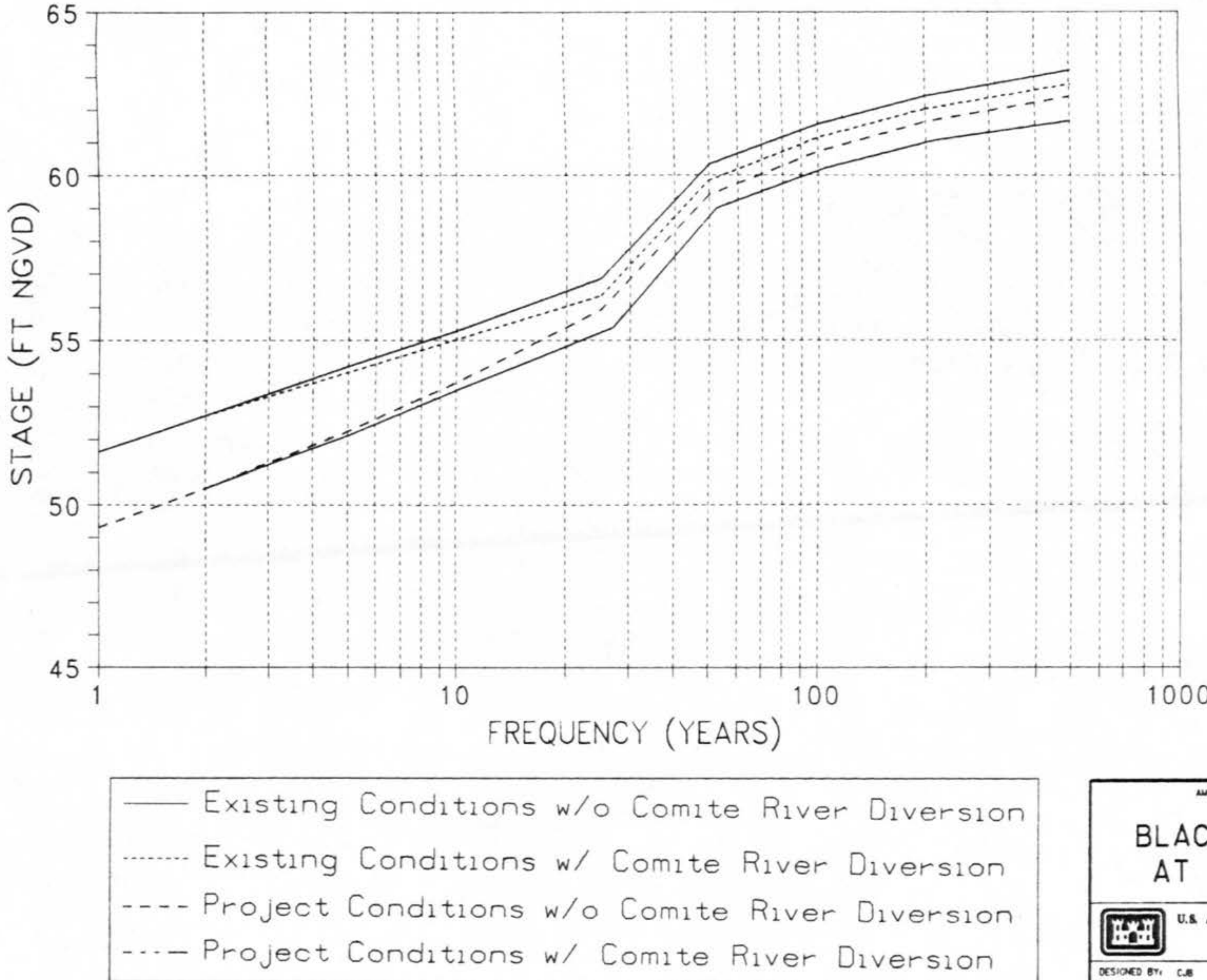
—— Existing Conditions w/o Comite River Diversion
- - - Existing Conditions w/ Comite River Diversion

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

ROBERT CANAL
AT GLEN OAKS DRIVE

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE:	PLOT DATE:	CADD FILE:	
DRAWN BY: CJB	NONE		FILE NO.	
CHECKED BY: CES	DATE: AUGUST 1993		H-4-40273	

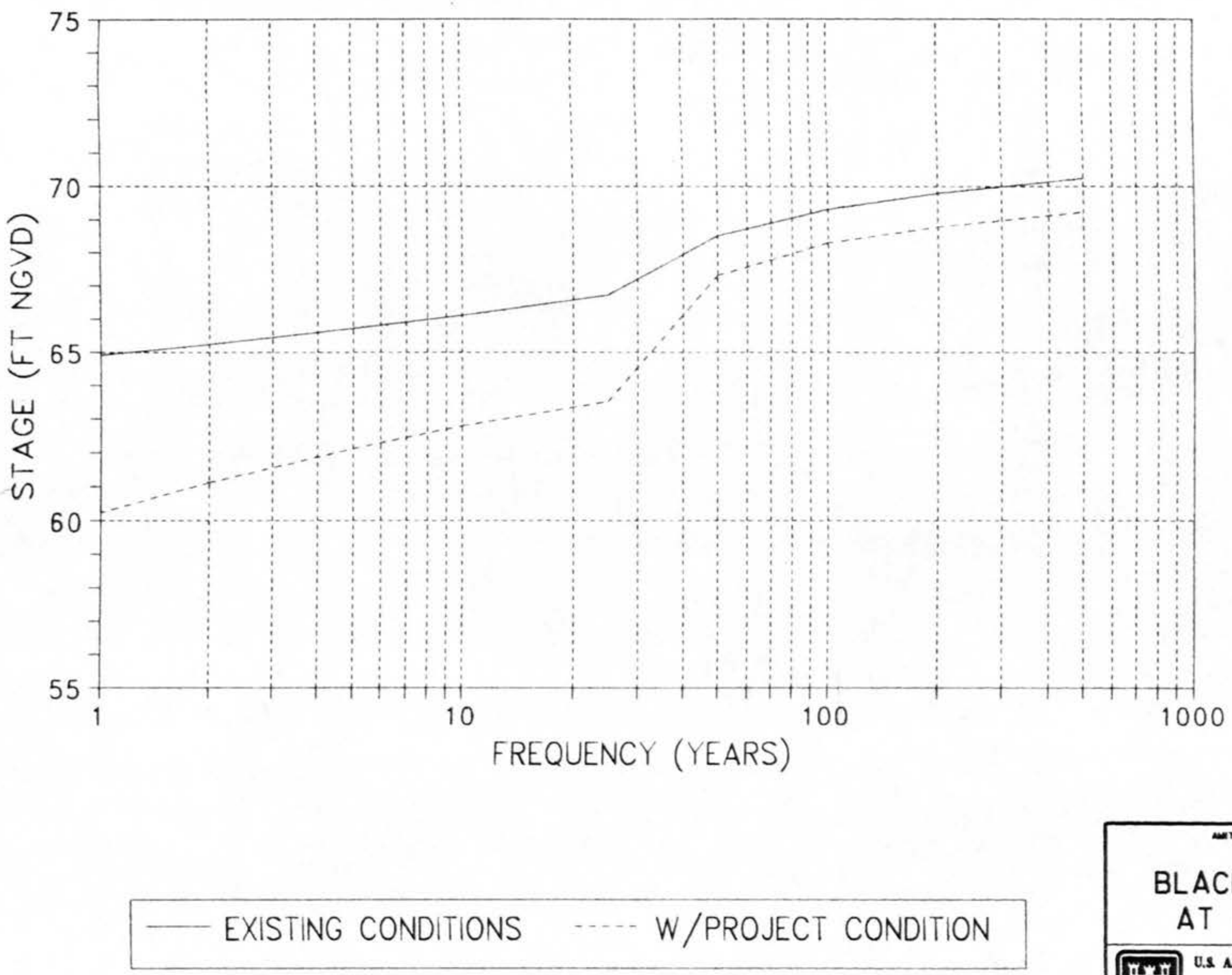


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU
AT HOOPER ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO.
CHECKED BY:	CES	DATE: AUGUST 1993		H-4-40273

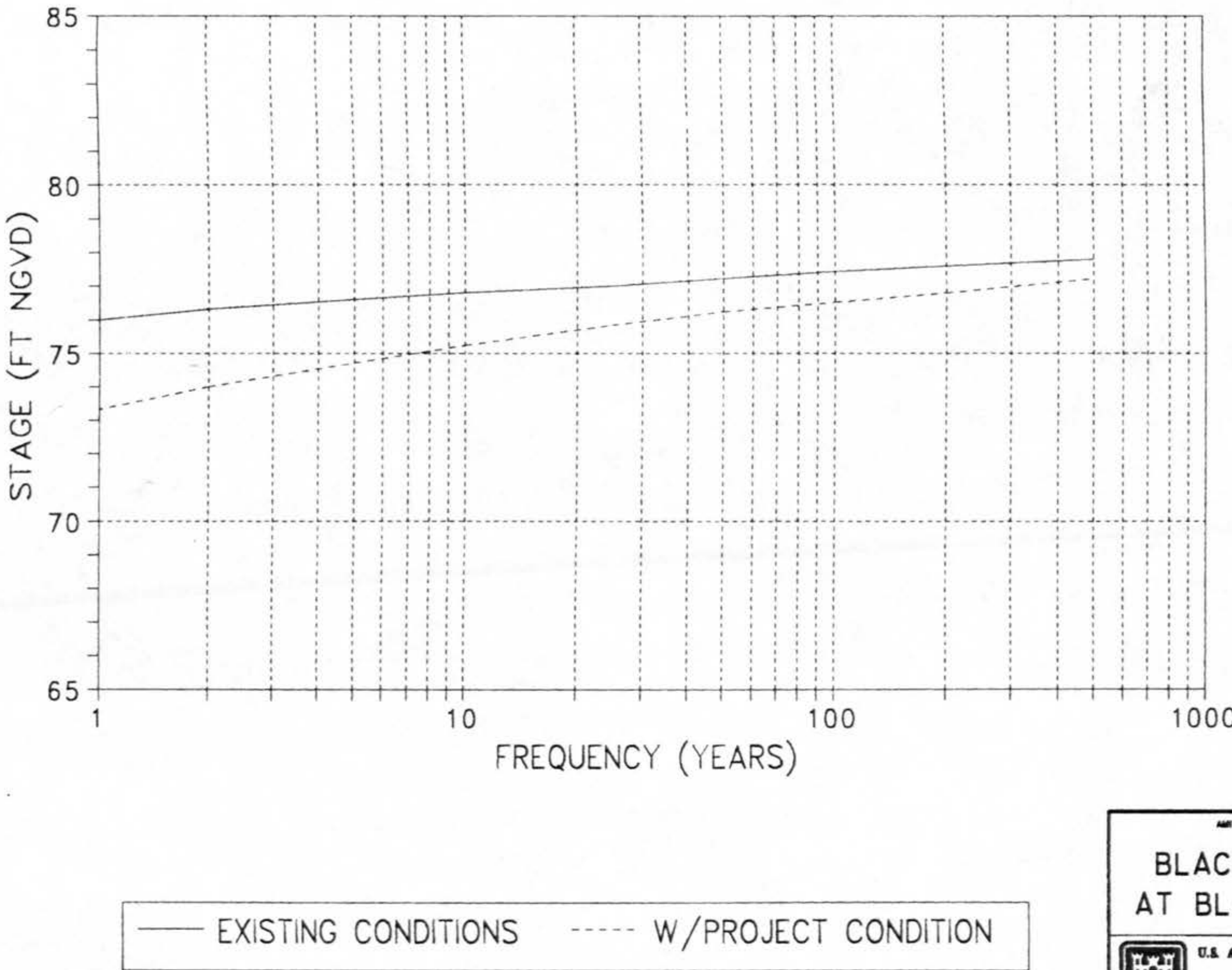


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU AT CAREY ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		

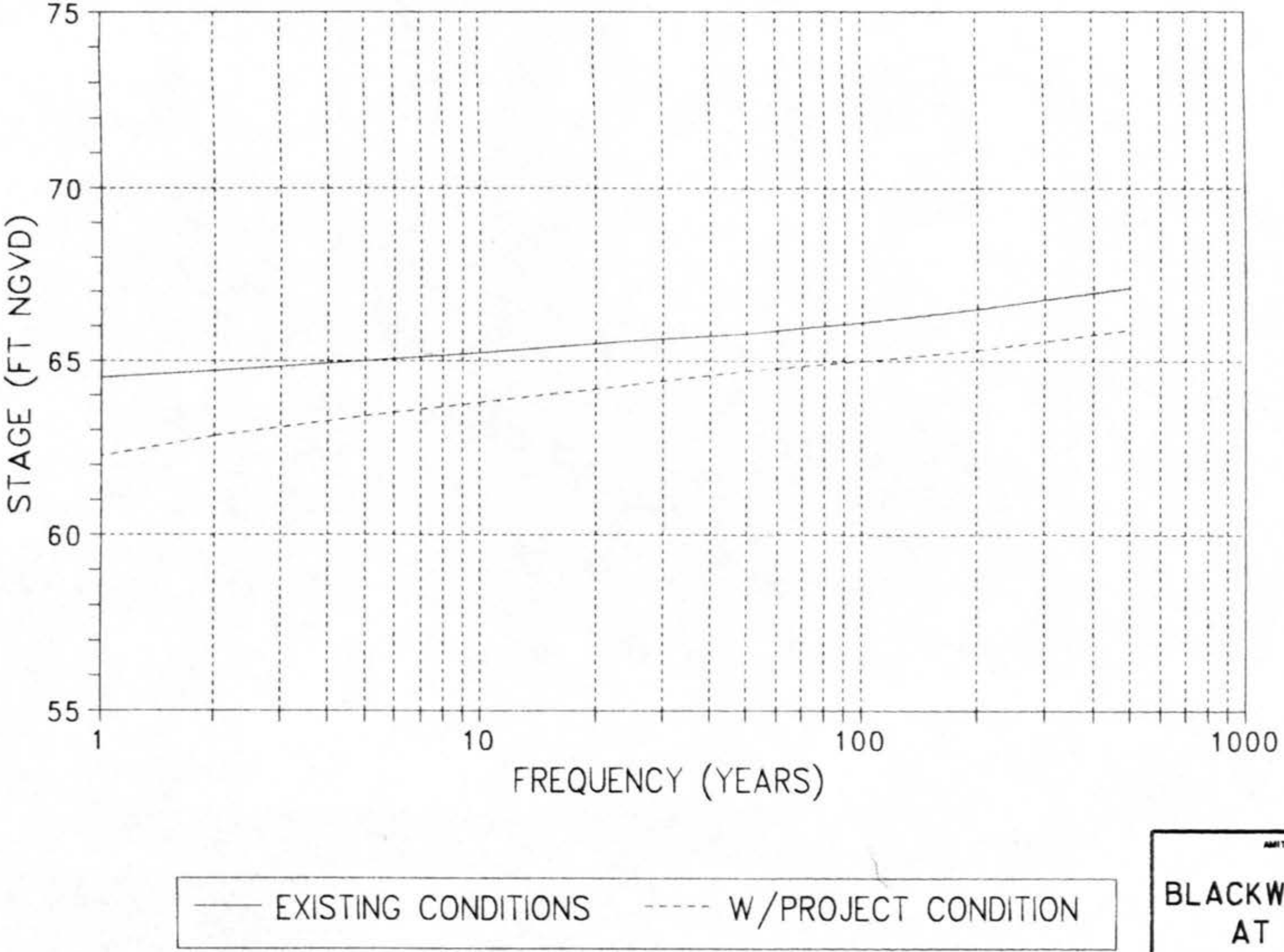


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU AT BLACKWATER ROAD

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY: CJB			FILE NO. H-4-40273
CHECKED BY: CES	DATE: AUGUST 1993		

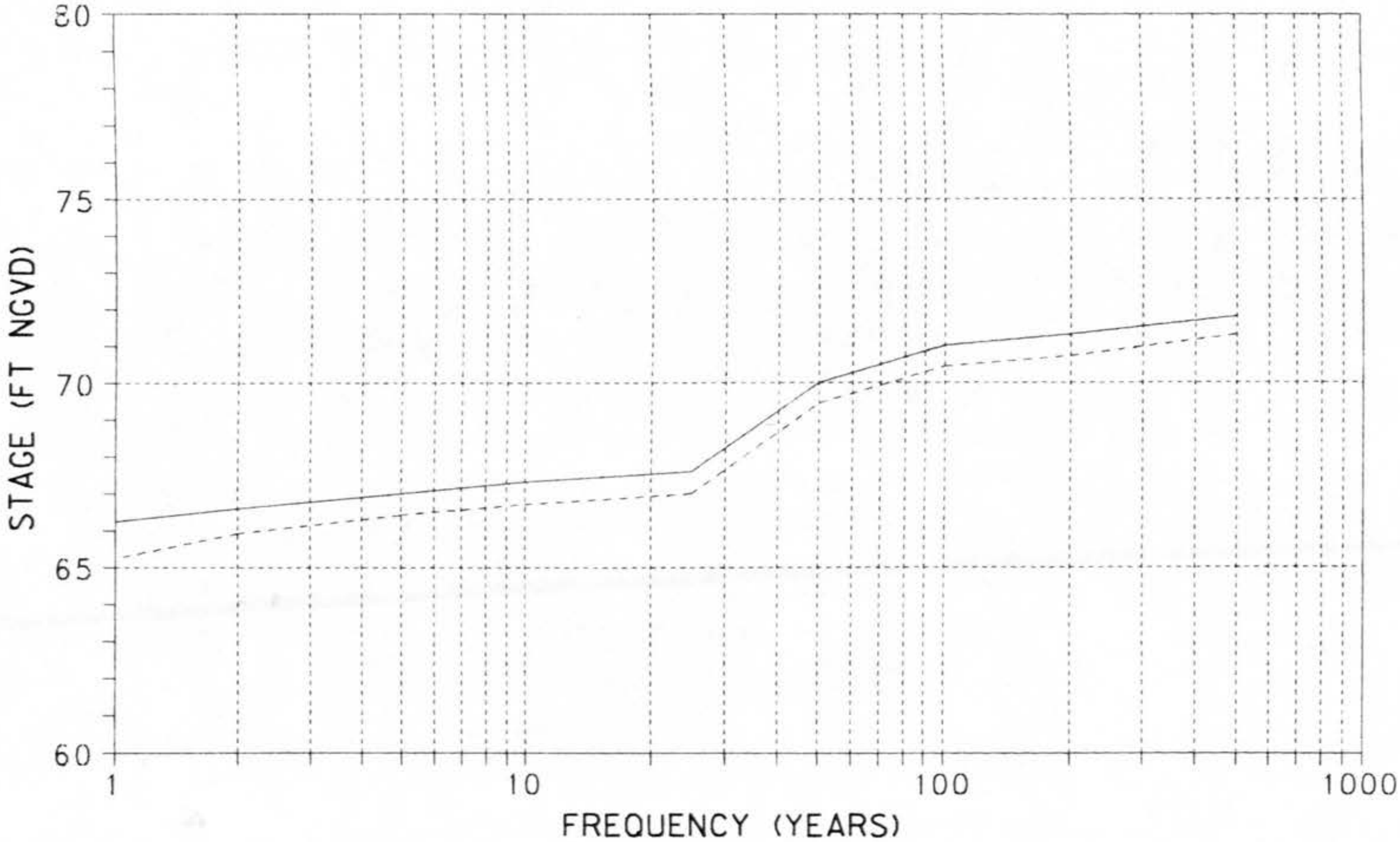


AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER B. TRIB. #1 AT GURNEY RD.

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:	CJB	PLOT SCALE: NONE	PLOT DATE:	CADD FILE:
DRAWN BY:	CJB			FILE NO. H-4-40273
CHECKED BY:	CES	DATE: AUGUST 1993		



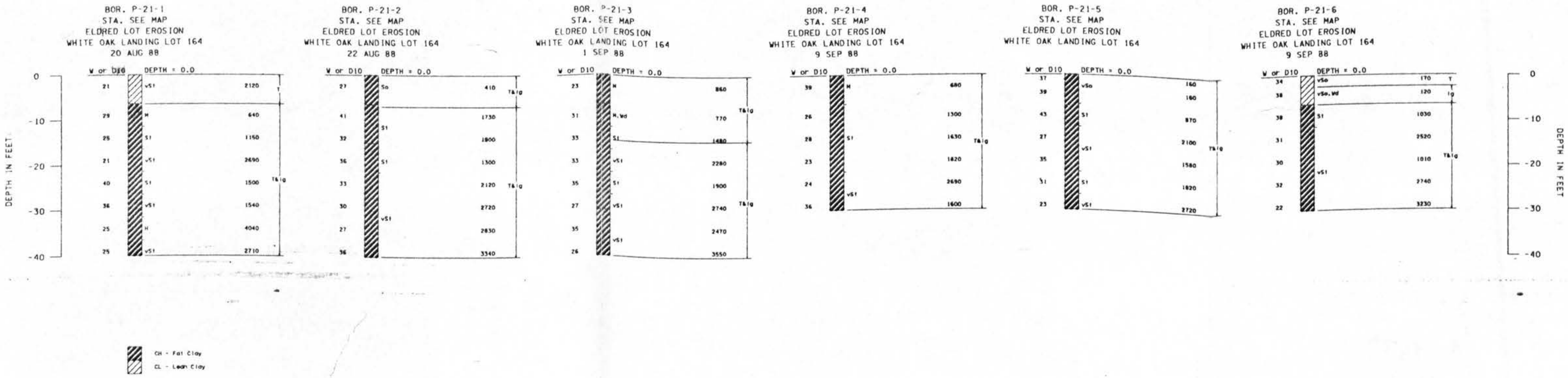
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER B. TRIB. #2 AT MOUTH

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: CJB		PLOT SCALE:	PLOT DATE:	CADD FILE:
DRAWN BY: CJB		NONE		FILE NO.
CHECKED BY: CES		DATE: SEPT. 1994		H-4-40273

Plate



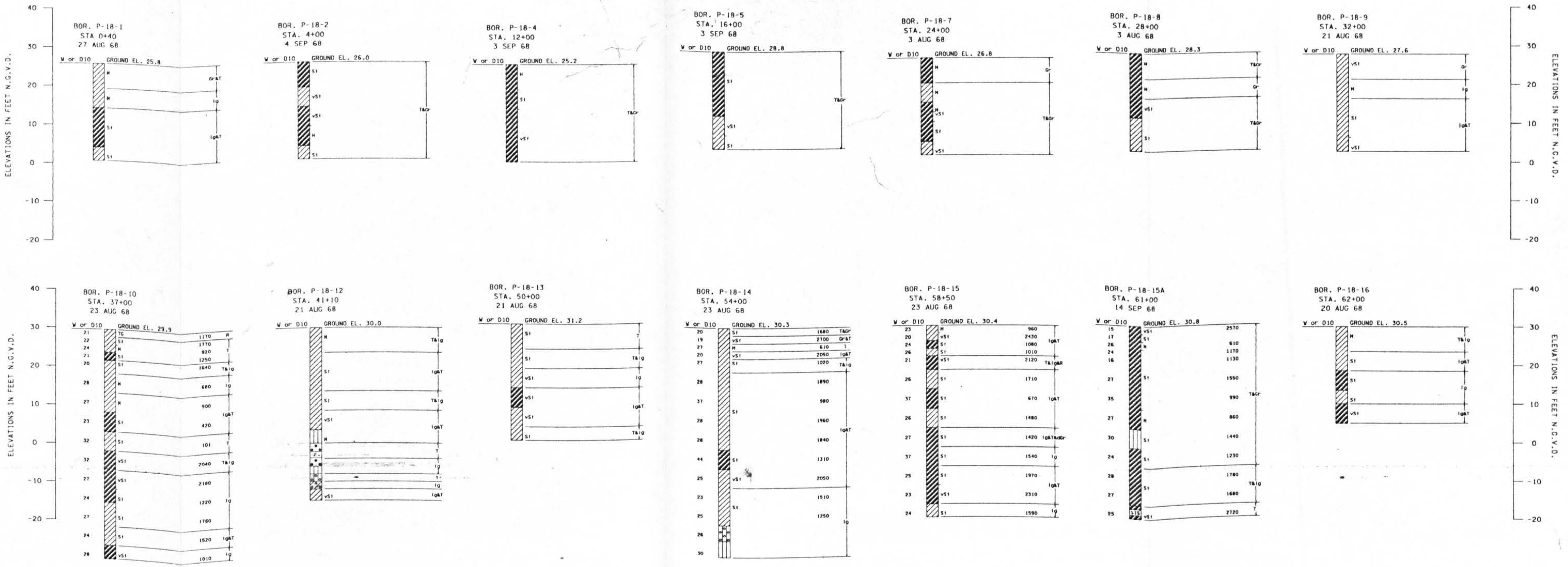
BORINGS BY OTHERS

EAST BATON ROUGE, LA.
ELDRED LOT EROSION
WHITE OAK LANDING
LOT 164

GENERAL BORINGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: X DRAWN BY: GTH CHECKED BY:	PLOT SCALE:	PLOT DATE: 4 JAN 93	CADD FILE: P21
	DATE: AUGUST 1993		FILE NO.



CH - Fat Clay
CL - Lean Clay
ML - Silt, Low Plasticity
SC - Clayey Sand
SM - Silty Sand
SP - Sand, Poorly Graded

BORINGS BY OTHERS

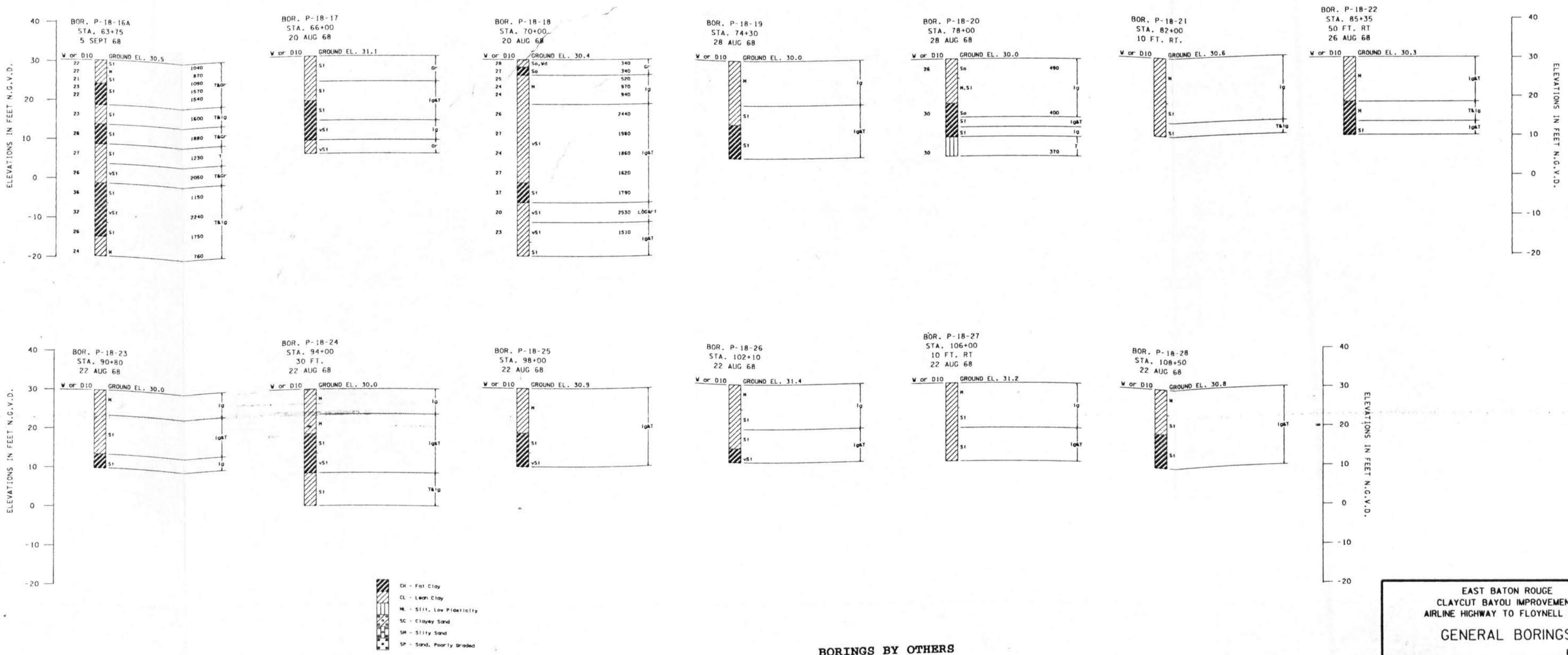
EAST BATON ROUGE
CLAYCUT BAYOU IMPROVEMENT
AIRLINE HIGHWAY TO FLOYNELL DRIVE

GENERAL BORINGS

PLATE 1 OF 2

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY:
DRAWN BY:
CHECKED BY:
PLOT SCALE:
PLOT DATE: 28 APRIL 92
CADD FILE:
FILE NO.
DATE: AUGUST 1993



BORINGS BY OTHERS

EAST BATON ROUGE
CLAYCUT BAYOU IMPROVEMENT
AIRLINE HIGHWAY TO FLOYNELL DRIVE

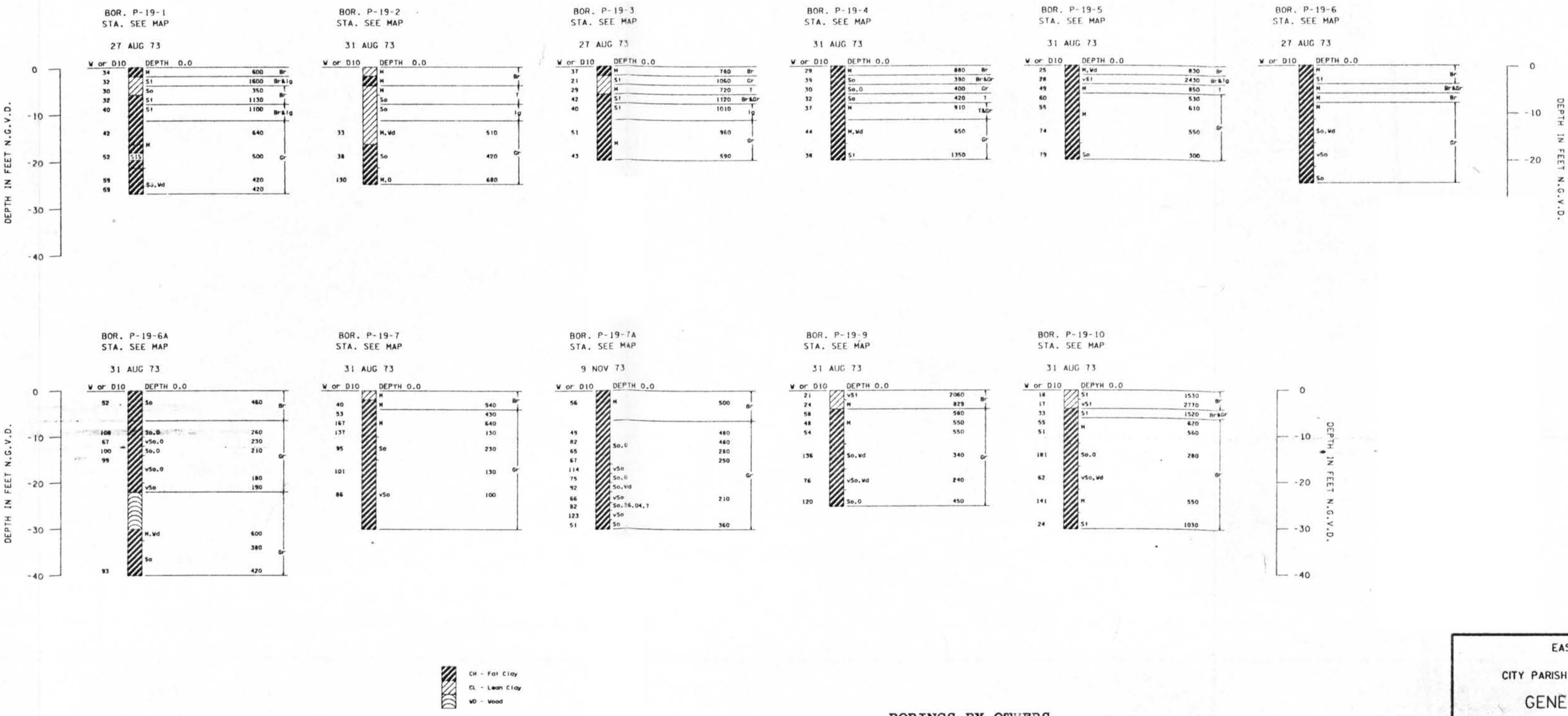
GENERAL BORINGS

PLATE 2 OF 2

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: DRAWN BY: CHECKED BY:	PLOT SCALE:	PLOT DATE: 28 APRIL 92	CADD FILE: FILE NO.
	DATE: AUGUST 1993		

PLATE C-96



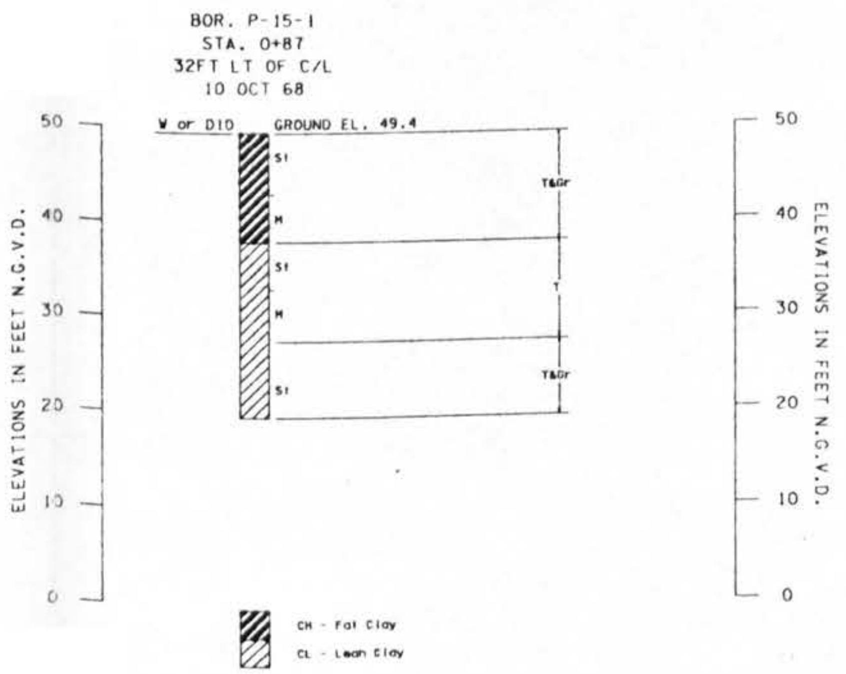
BORINGS BY OTHERS

EAST BATON ROUGE
L.S.U. CANAL
CITY PARISH DEPT. OF PUBLIC WORKS

GENERAL BORINGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: DRAWN BY: CHECKED BY:	PLOT SCALE:	PLOT DATE: 8 MAY 92
	DATE: AUGUST 1993	CADD FILE: FILE NO.



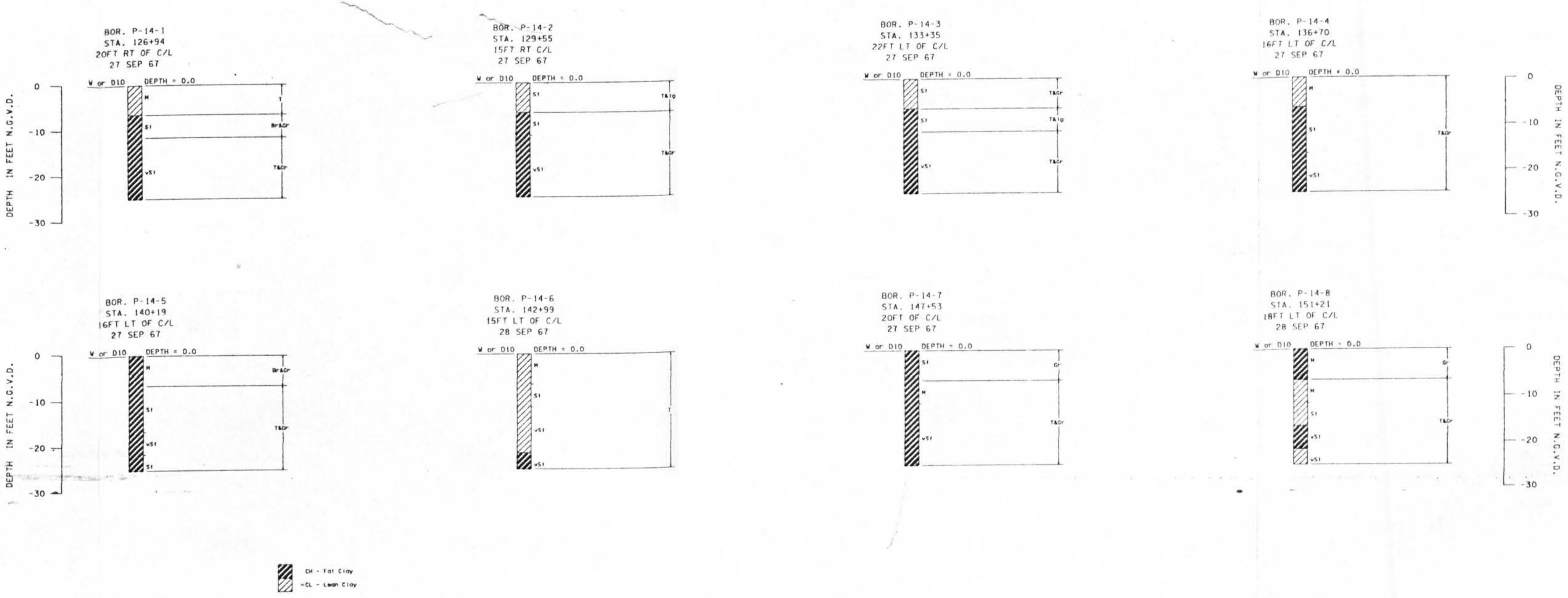
BORINGS BY OTHERS

EAST BATON ROUGE, LA.
HURRICANE CREEK LATERAL
MOHICAN STREET TO NORTH 38TH. STREET

GENERAL BORING

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: X DRAWN BY: GTH CHECKED BY:	PLOT SCALE:	PLOT DATE: 20 JULY 92	CADD FILE: P15
	DATE: AUGUST 1993		FILE NO.



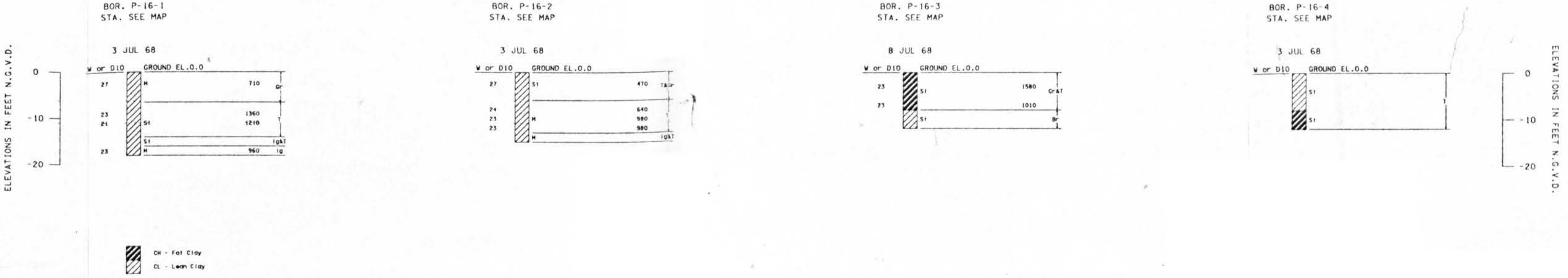
BORINGS BY OTHERS

EAST BATON ROUGE, LA.
WARD CREEK
NORTH 38TH. STREET AND ACADIAN THRUWAY

GENERAL BORINGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: X	PLOT SCALE:	PLOT DATE: 20 JULY 92	CADD FILE: P14
DRAWN BY: GTH			FILE NO.
CHECKED BY:	DATE: AUGUST 1993		



BORINGS BY OTHERS

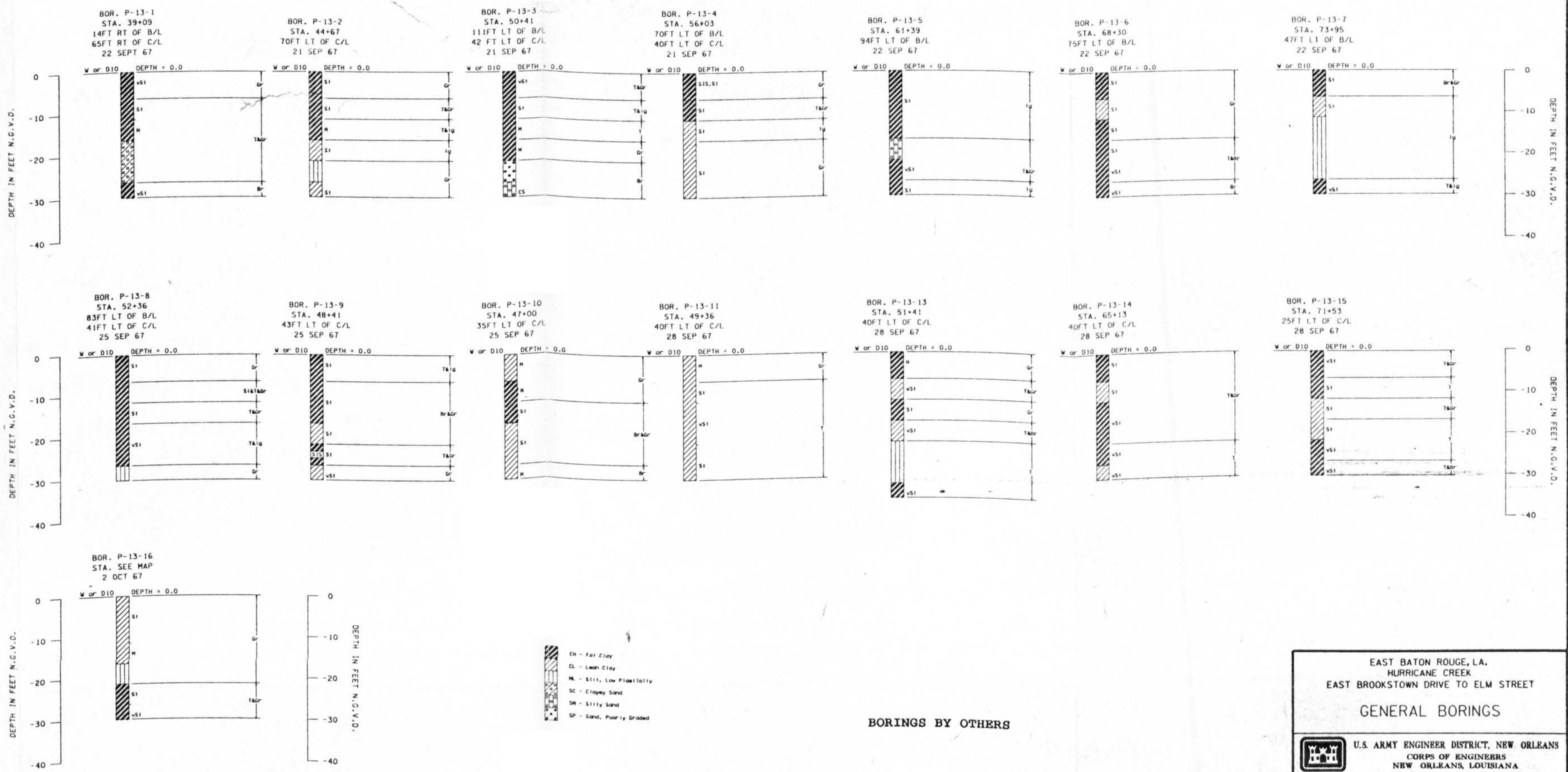
EAST BATON ROUGE, LA.
HURRICANE CREEK LATERAL

GENERAL BORINGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: X DRAWN BY: GTH CHECKED BY:	PLOT SCALE:	PLOT DATE: 23 JULY 92	CADD FILE: P16 FILE NO.
	DATE: AUGUST 1993		

PLATE C-100



BORINGS BY OTHERS

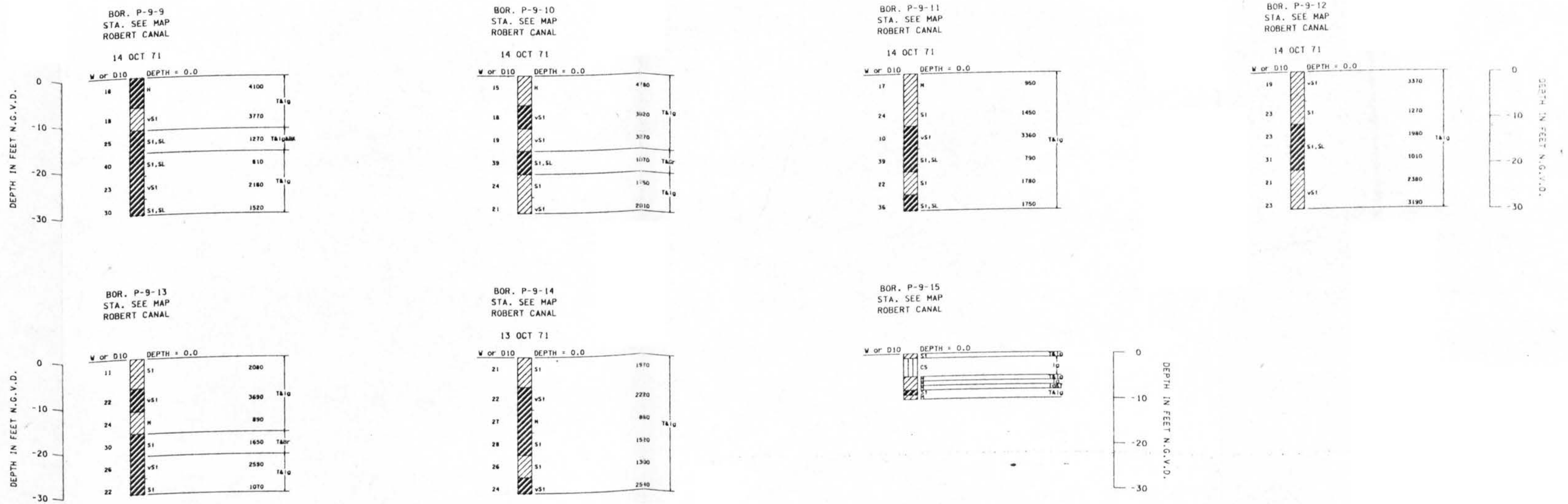
EAST BATON ROUGE, LA.
HURRICANE CREEK
EAST BROOKSTOWN DRIVE TO ELM STREET

GENERAL BORINGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: X DRAWN BY: GTH CHECKED BY:	PLOT SCALE:	PLOT DATE: 20 JULY 92	CADD FILE: P13 FILE NO.
	DATE: AUGUST 1993		

PLATEC-101



CH - Fat Clay
CL - Lean Clay
ML - Silt, Low Plasticity

BORINGS BY OTHERS

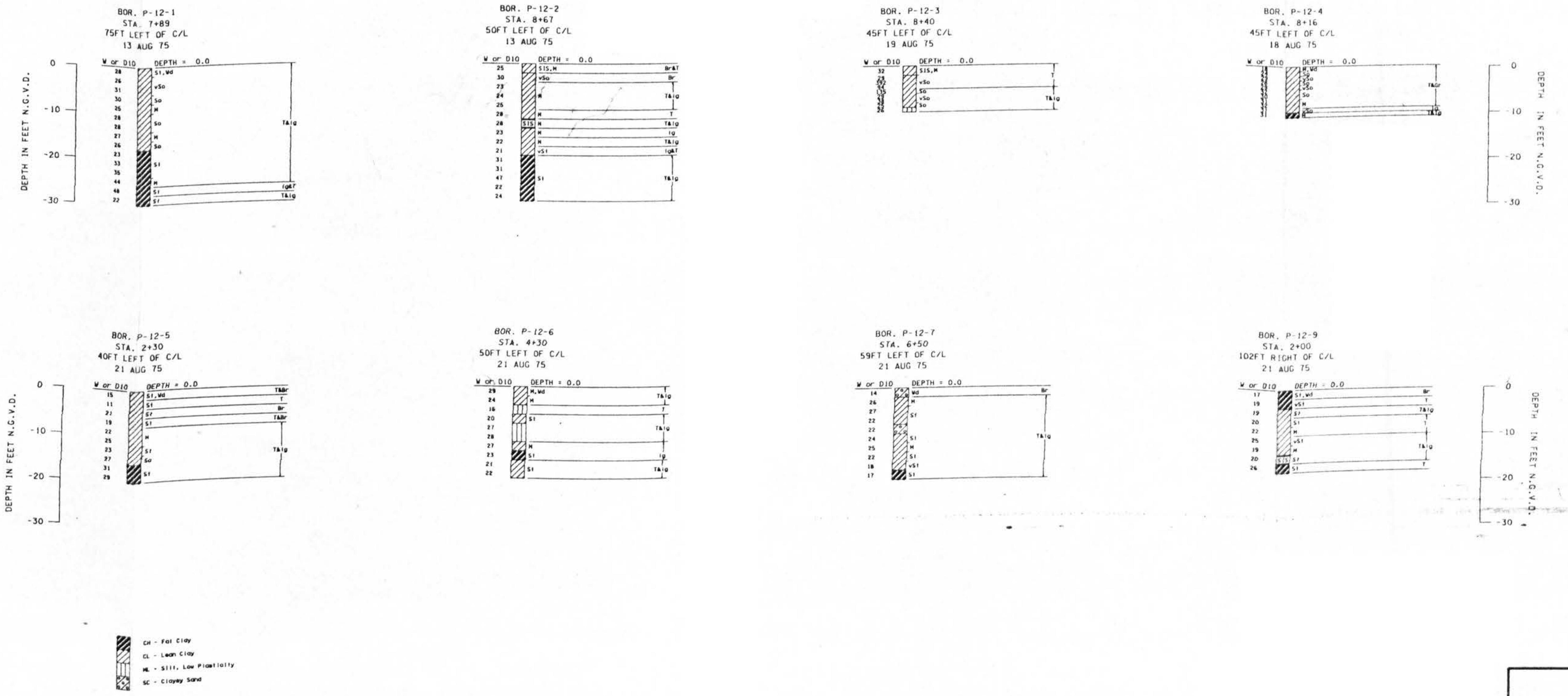
EAST BATON ROUGE, LA.
ROBERT CANAL

GENERAL BORINGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: X DRAWN BY: GTH CHECKED BY:	PLOT SCALE:	PLOT DATE: 15 JULY 92	CADD FILE: ROBC FILE NO.
	DATE: AUGUST 1993		

PLATE C-102



BORINGS BY OTHERS

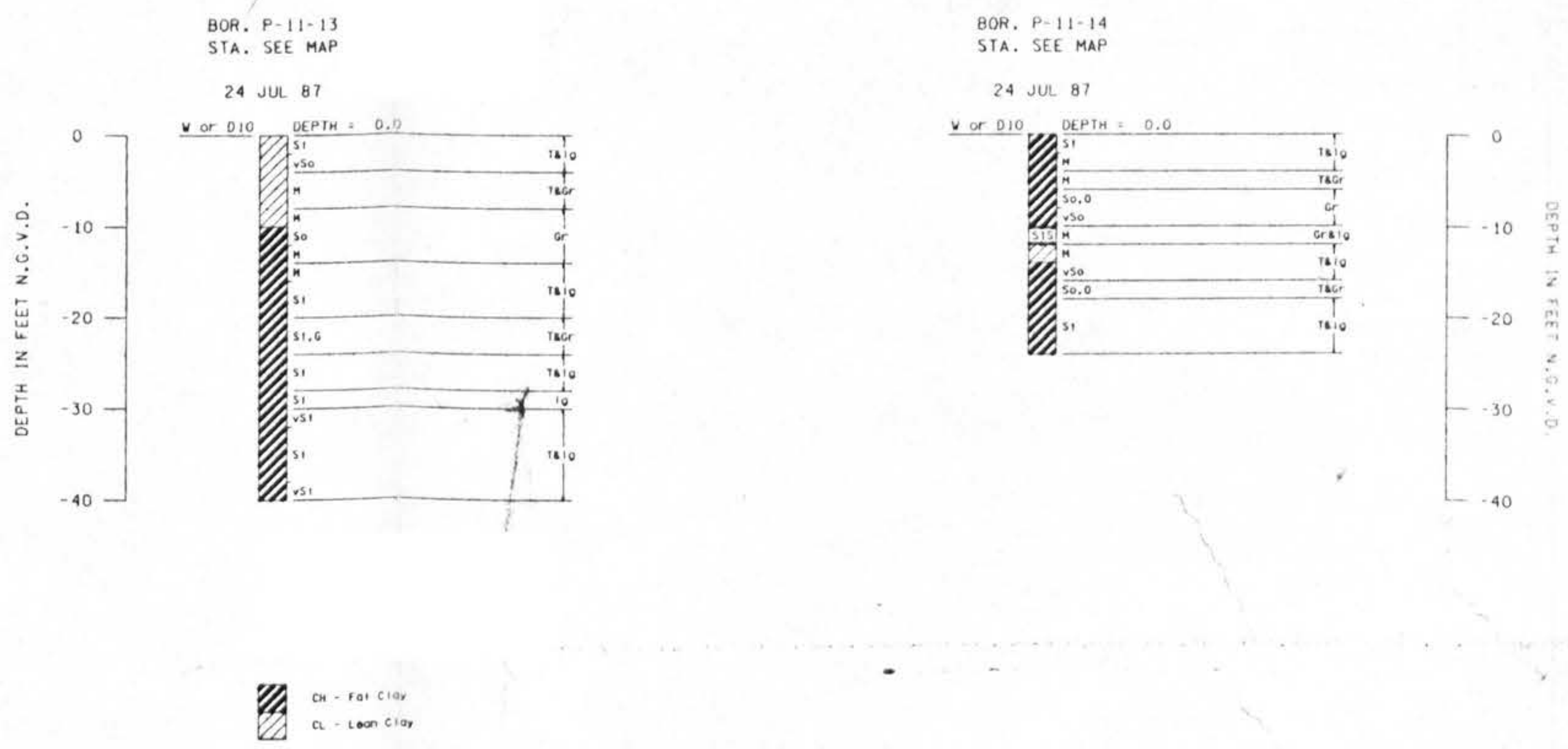
EAST BATON ROUGE, LA.
WARDS CREEK
AT SANDLEWOOD

GENERAL BORINGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: X DRAWN BY: GTH CHECKED BY:	PLOT SCALE:	PLOT DATE: 16 JULY 92
	DATE: AUGUST 1993	CADD FILE: P12 FILE NO.

PLATE C-103



BORINGS BY OTHERS

EAST BATON ROUGE, LA.
WARDS CREEK
SIEGEN PARK MALL

GENERAL BORINGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: X	PLOT SCALE:	PLOT DATE: 16 JULY 92	CADD FILE: P11
DRAWN BY: GTH			FILE NO.
CHECKED BY:	DATE: AUGUST 1993		

PLATE C-104

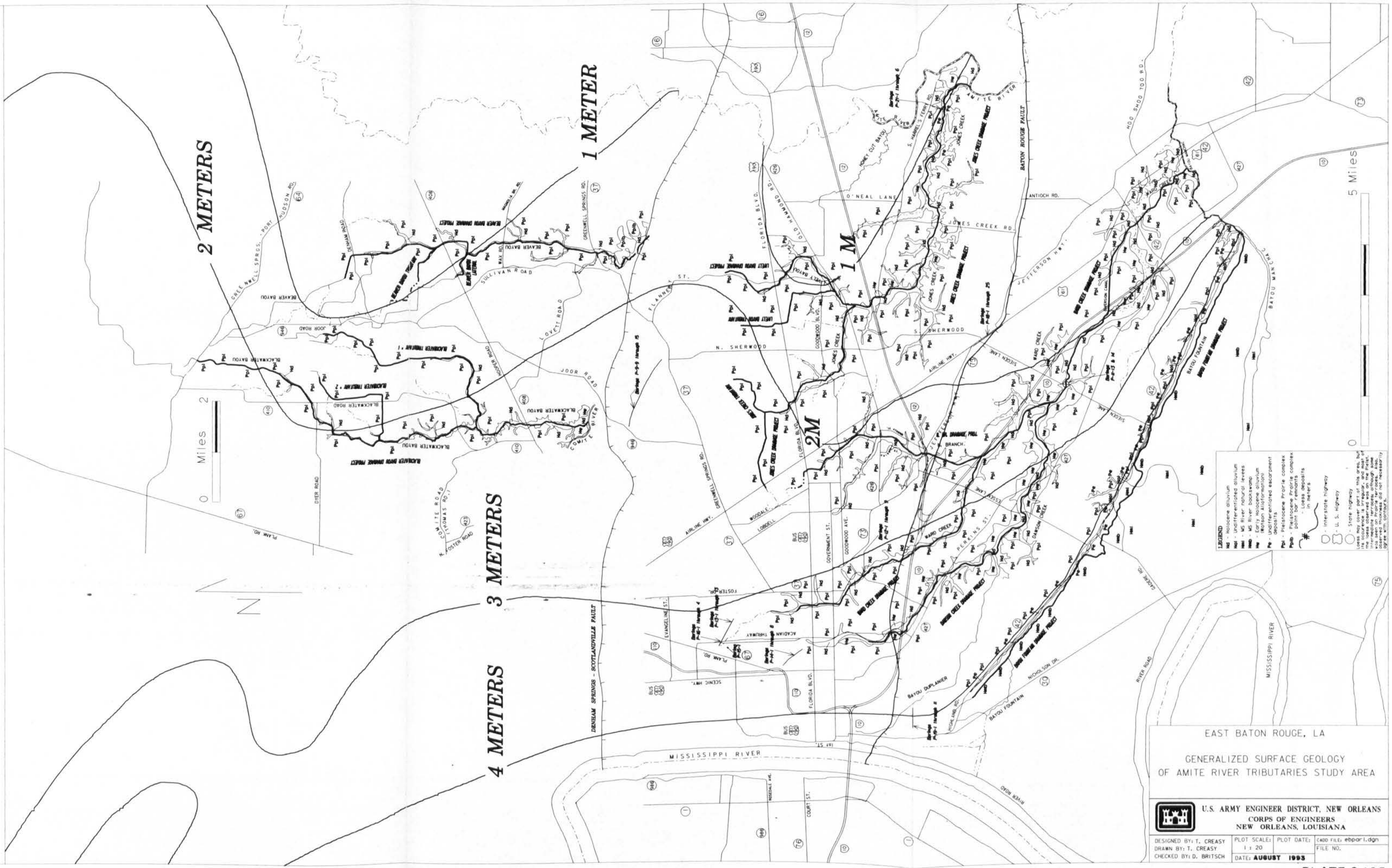
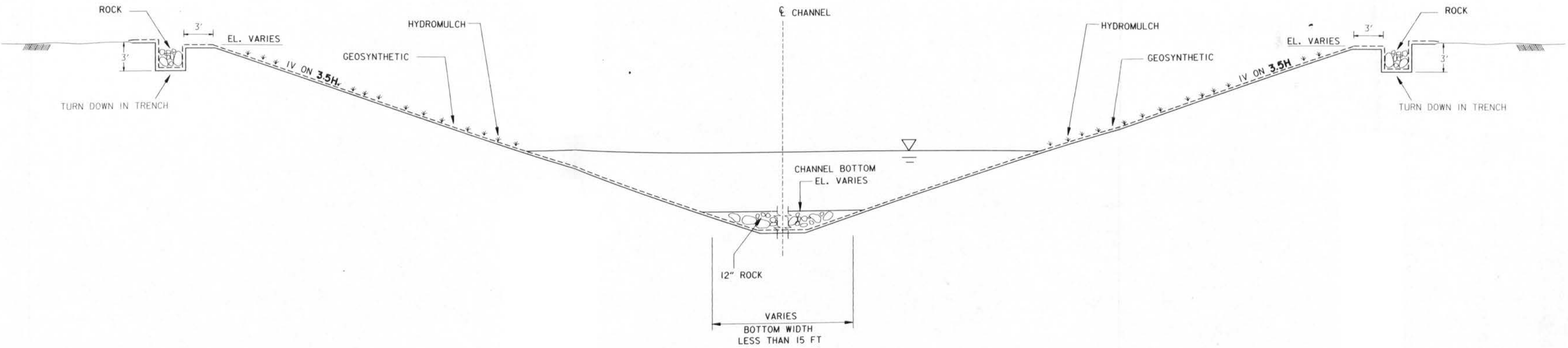

EAST BATON ROUGE, LA
GENERALIZED SURFACE GEOLOGY
OF AMITE RIVER TRIBUTARIES STUDY AREA
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA
DESIGNED BY: T. CREASY
DRAWN BY: T. CREASY
CHECKED BY: D. BRITSCH
PLOT SCALE: 1 : 20
PLOT DATE:
CADD FILE: ebparl.dgn
FILE NO.
DATE: AUGUST 1993
1 METER
2 METERS
3 METERS
4 METERS
1 M
2M
BATON ROUGE FAULT
DENHAM SPRINGS - SCOTLANDVILLE FAULT
MISSISSIPPI RIVER
AMITE RIVER
COMITE RIVER
BEAVER BAYOU
BLACKWATER BAYOU
JONES CREEK
WARD CREEK
DAWSON CREEK
BAYOU FOUNTAIN
BAYOU MANCHAC
BAYOU DUPLANIER
AIRLINE HWY.
FLORIDA BLVD.
GOVERNMENT ST.
PERKINS ST.
JOOR ROAD
SULLIVAN ROAD
GREENWELL SPRINGS RD.
Miles
0
2
5 Miles
N

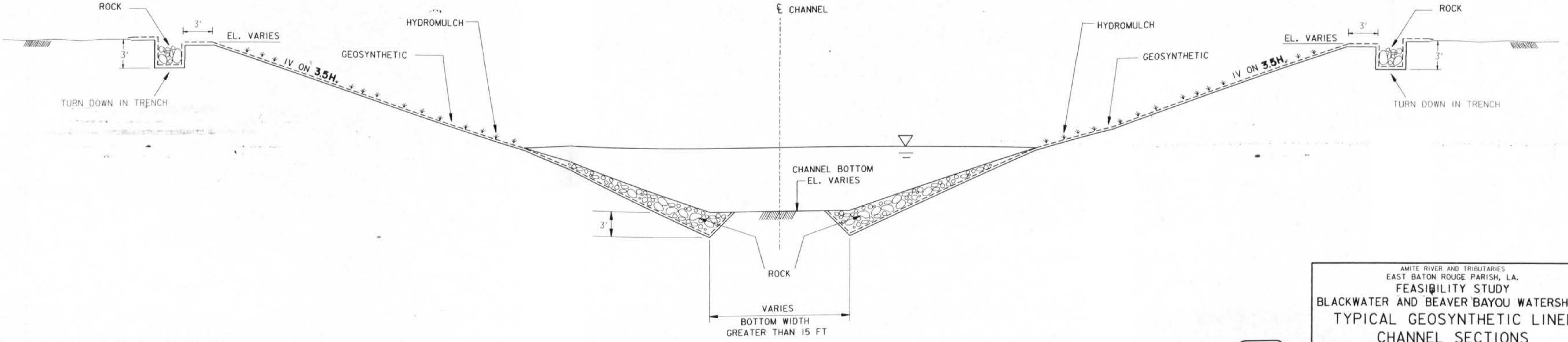
PLATE C-105



TYPICAL SECTION

BLACKWATER AND BEAVER BAYOU WATERSHED

N.T.S.



TYPICAL SECTION

BLACKWATER AND BEAVER BAYOU WATERSHED

N.T.S.

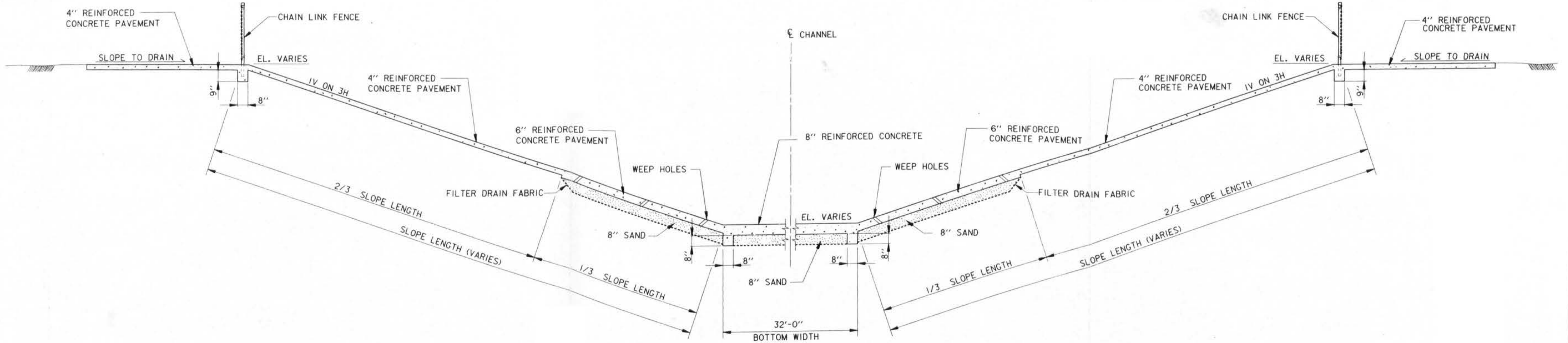
AMITE RIVER AND TRIBUTARIES
EAST BATON ROUGE PARISH, LA.
FEASIBILITY STUDY
BLACKWATER AND BEAVER BAYOU WATERSHEDS

TYPICAL GEOSYNTHETIC LINED CHANNEL SECTIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

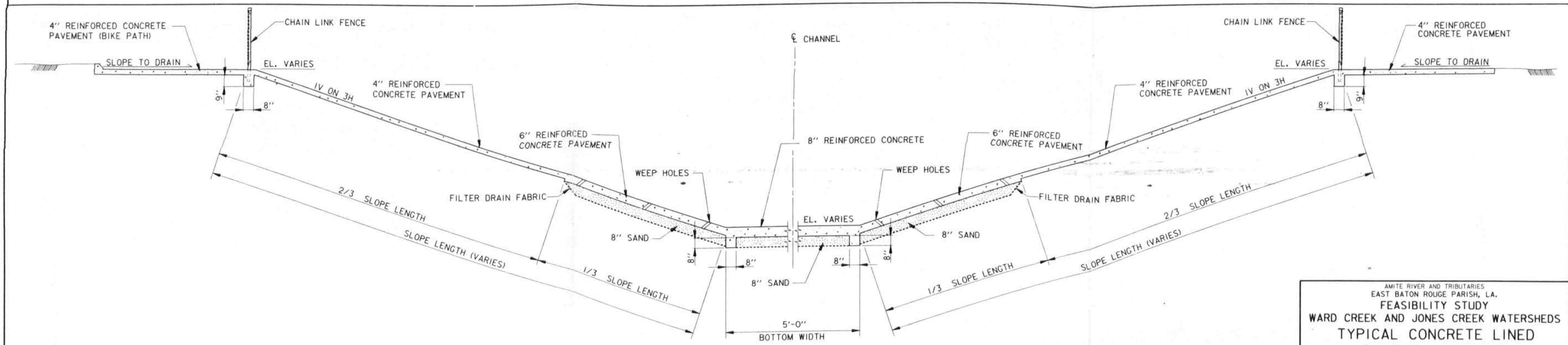
DESIGNED BY: C. ALFONSO DRAWN BY: L. HOYT CHECKED BY: R.BROUSSARD	PLOT SCALE: 32	PLOT DATE: X	CADD FILE: WARD.DGN FILE NO.
	DATE: AUGUST 1993		

C•A•D



TYPICAL SECTION
WARD CREEK WATERSHED - NORTH BRANCH

N.T.S.



TYPICAL SECTION
JONES CREEK WATERSHED

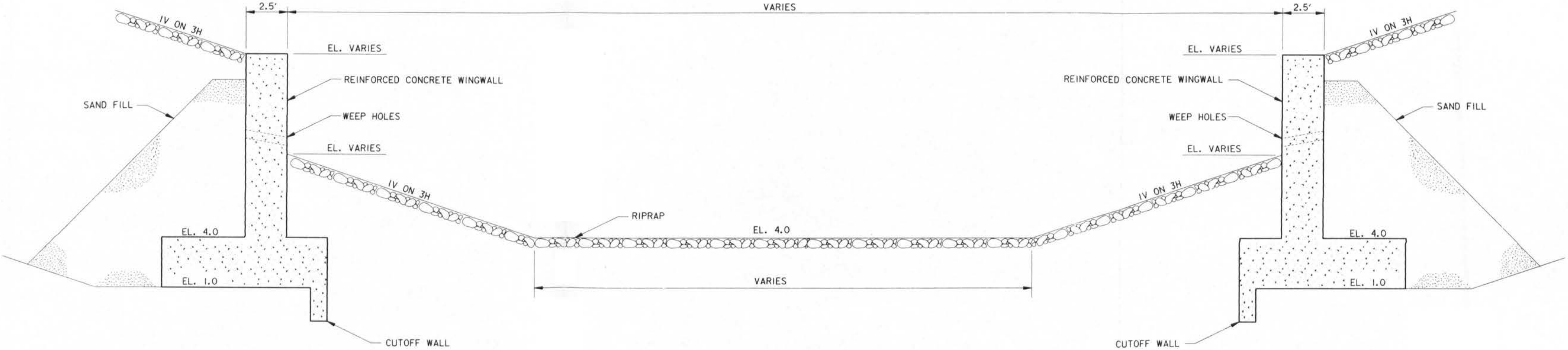
N.T.S.

AMITE RIVER AND TRIBUTARIES
EAST BATON ROUGE PARISH, LA.
FEASIBILITY STUDY
WARD CREEK AND JONES CREEK WATERSHEDS

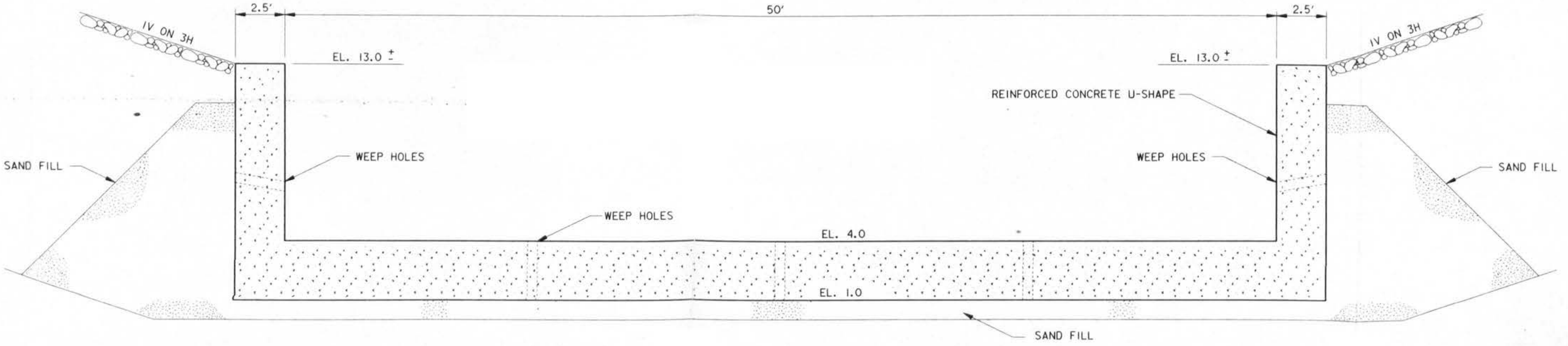
TYPICAL CONCRETE LINED CHANNEL SECTIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: TAN DRAWN BY: COUVILLION CHECKED BY: JOLISSAINT	PLOT SCALE: 32	PLOT DATE:	CADD FILE: WARD.DGN
	DATE: AUGUST, 1993		FILE NO. H-4-40273



TYPICAL REINFORCED CONCRETE WINGWALLS



TYPICAL REINFORCED CONCRETE U-SHAPE

SCALE: 3/8" = 1'- 0"

12" 0 2' 4' 6' 8' 10'

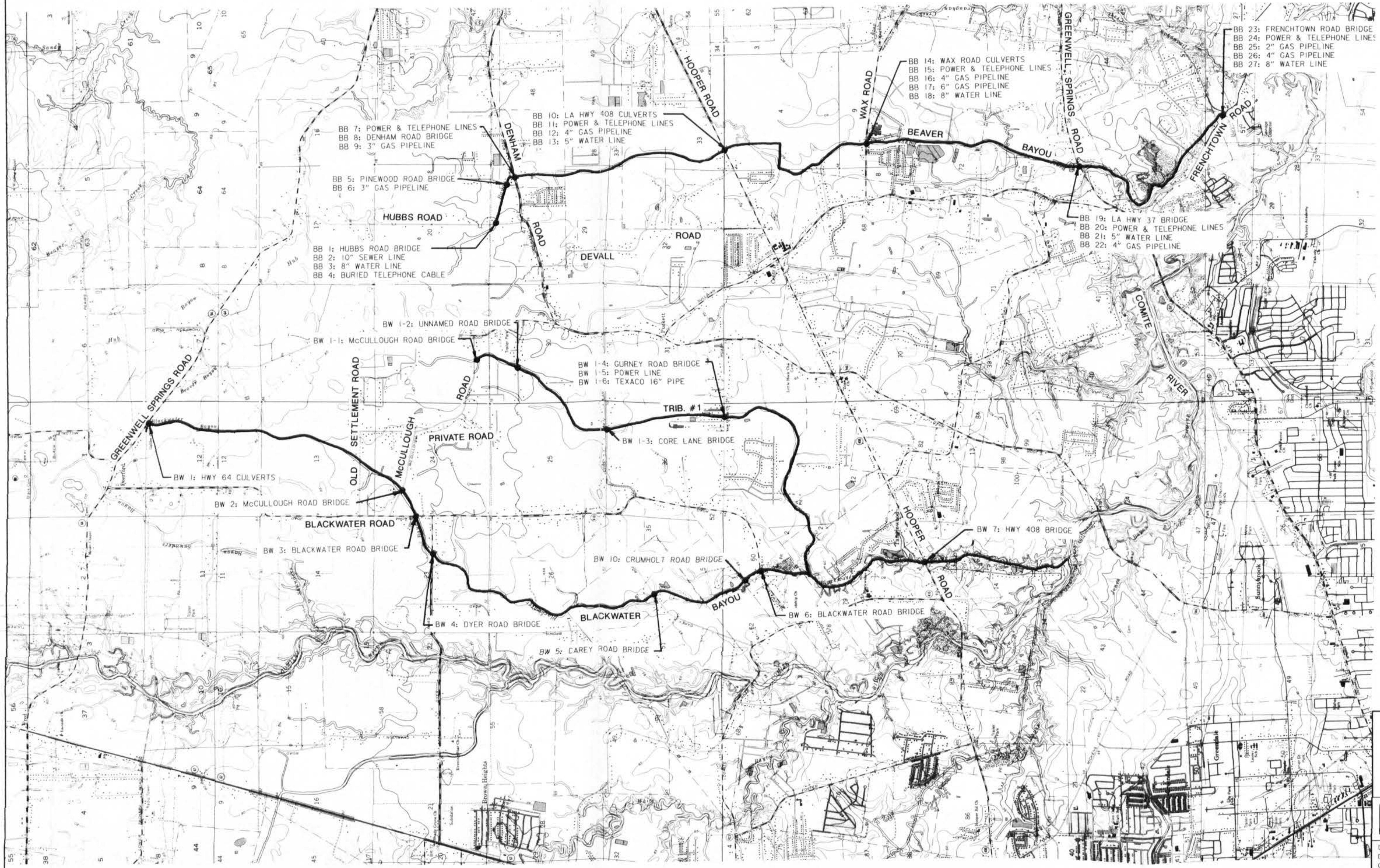
AMITE RIVER AND TRIBUTARIES
EAST BATON ROUGE PARISH, LA.
FEASIBILITY STUDY
BAYOU FOUNTAIN WATERSHED

EXISTING SEWER MAIN CROSSING
TYPICAL CHANNEL SECTIONS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: TAN DRAWN BY: COUVILLION CHECKED BY: JOLISSAINT	PLOT SCALE: 32	PLOT DATE:	CADD FILE: FOUNTAIN.DGN
	DATE: AUGUST, 1993		FILE NO. H-4-40273

C·A·D



AMITE RIVER & TRIBUTARIES
EAST BATON ROUGE PARISH

Beaver Bayou
Blackwater Bayou and Tributaries

Legend:

BB - Beaver Bayou
BW - Blackwater Bayou
BW1 - Blackwater Bayou Tributary #1

NOTE: LOCATIONS OF FACILITIES DEPICTED ON THIS CHART ARE APPROXIMATE.

Revised by CELMN-ED-SR, 21 Jul 94.

SCALE IN MILES

1 MI. 0 1 MI.

AMITE RIVER AND TRIBUTARIES FLOOD CONTROL
EAST BATON ROUGE PARISH FEASIBILITY STUDY

BLACKWATER BAYOU, BEAVER BAYOU AND TRIBUTARIES

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

DESIGNED BY: FV	PLOT SCALE: AS SHOWN	PLOT DATE: N/A	CADD FILE: N/A
DRAWN BY: LMP			FILE NO.
CHECKED BY: FV	DATE: SEPTEMBER 1994		H-4-40273

PLATE 109

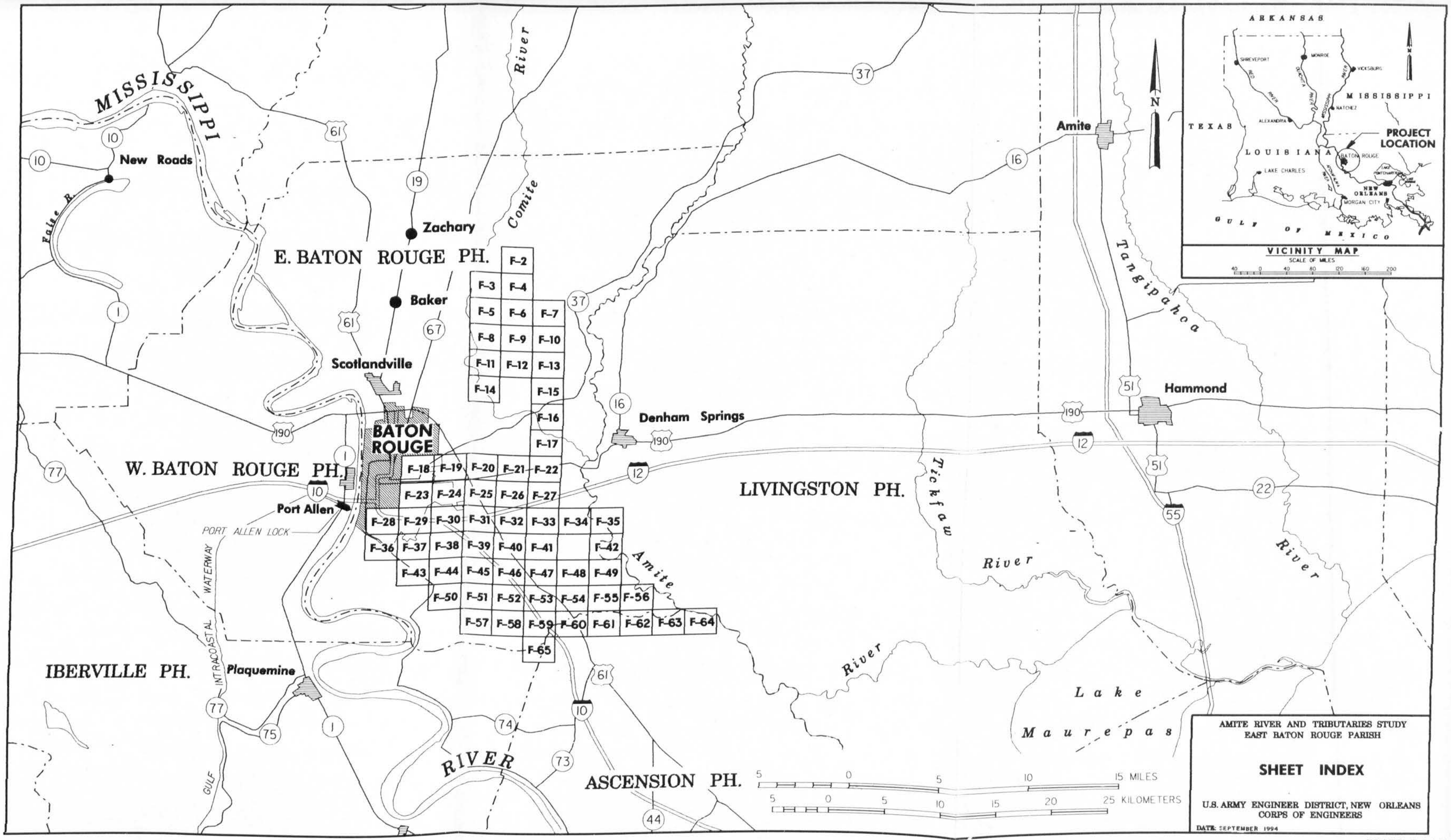

AMITE RIVER AND TRIBUTARIES STUDY
EAST BATON ROUGE PARISH
SHEET INDEX
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
DATE: SEPTEMBER 1994
VICINITY MAP
SCALE OF MILES
40 0 40 80 120 160 200
ARKANSAS
MISSISSIPPI
TEXAS
LOUISIANA
SHREVEPORT
MONROE
VICKSBURG
NATCHEZ
ALEXANDRIA
BATON ROUGE
LAKE CHARLES
NEW ORLEANS
MORGAN CITY
GULF OF MEXICO
PROJECT LOCATION
N
MISSISSIPPI
RIVER
New Roads
False R.
Zachary
Baker
Scotlandville
BATON ROUGE
Port Allen
PORT ALLEN LOCK
GULF INTRACOASTAL WATERWAY
Plaquemine
E. BATON ROUGE PH.
W. BATON ROUGE PH.
IBERVILLE PH.
ASCENSION PH.
LIVINGSTON PH.
Comite River
Amite River
Tickfaw River
Tangipahoa River
Lake Maurepas
Amite
Hammond
Denham Springs
F-2
F-3
F-4
F-5
F-6
F-7
F-8
F-9
F-10
F-11
F-12
F-13
F-14
F-15
F-16
F-17
F-18
F-19
F-20
F-21
F-22
F-23
F-24
F-25
F-26
F-27
F-28
F-29
F-30
F-31
F-32
F-33
F-34
F-35
F-36
F-37
F-38
F-39
F-40
F-41
F-42
F-43
F-44
F-45
F-46
F-47
F-48
F-49
F-50
F-51
F-52
F-53
F-54
F-55
F-56
F-57
F-58
F-59
F-60
F-61
F-62
F-63
F-64
F-65
10
61
19
37
16
1
67
190
77
12
51
22
55
74
73
75
44
5 0 5 10 15 MILES
5 0 5 10 15 20 25 KILOMETERS

PLATE F-1,A-3

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

MATCH SHEET F-4

NOTE: ORIGINAL SHEET NO. IS A-16 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
BLACKWATER BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

N

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

MATCH SHEET F-5

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA, POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS A-22 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU

10 YEAR OVERFLOW

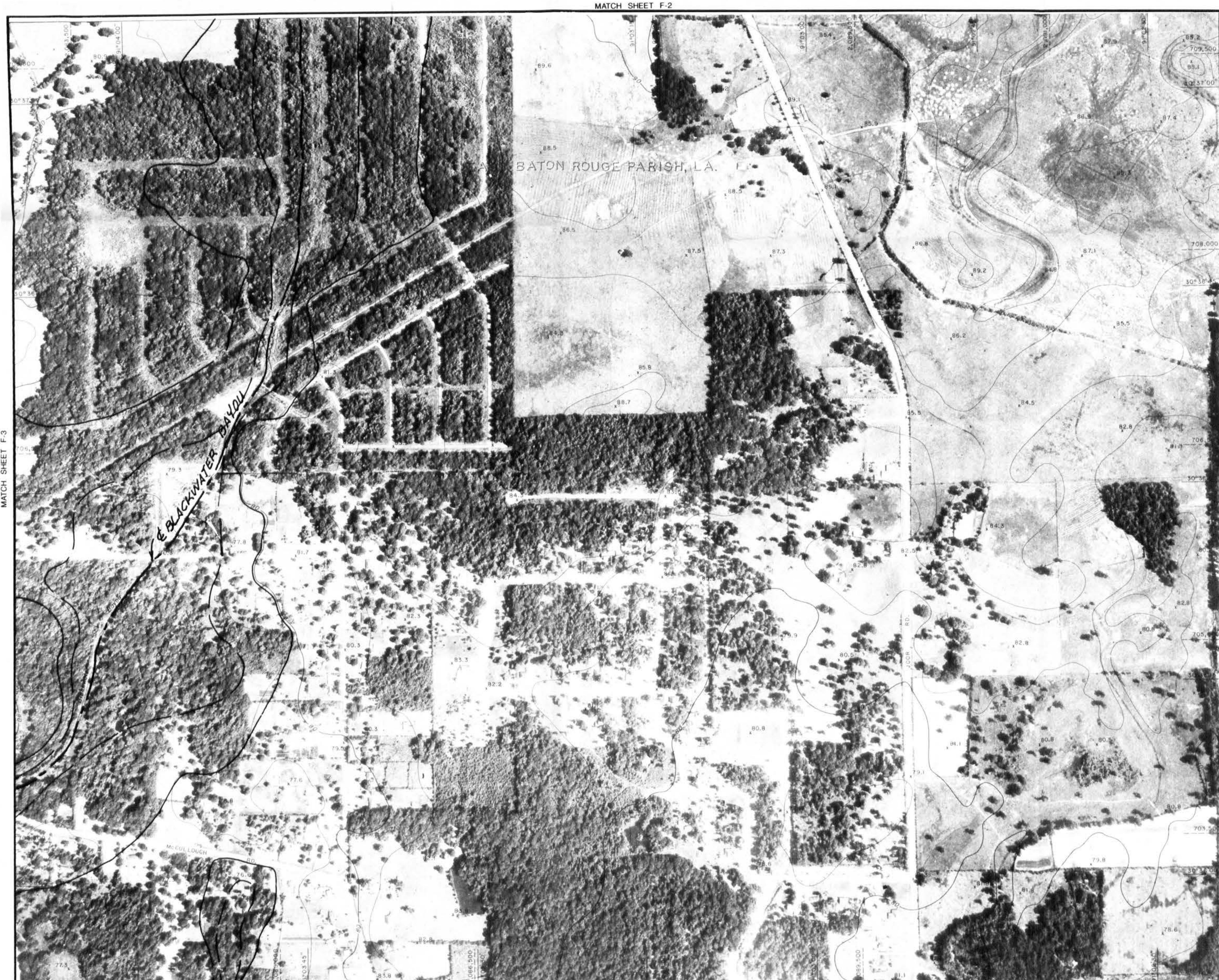
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-3, A-3

MATCH SHEET F-2

MATCH SHEET F-3



LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

MATCH SHEET F-6

NOTE: ORIGINAL SHEET NO. IS A-23 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
BLACKWATER BAYOU

10 YEAR OVERFLOW

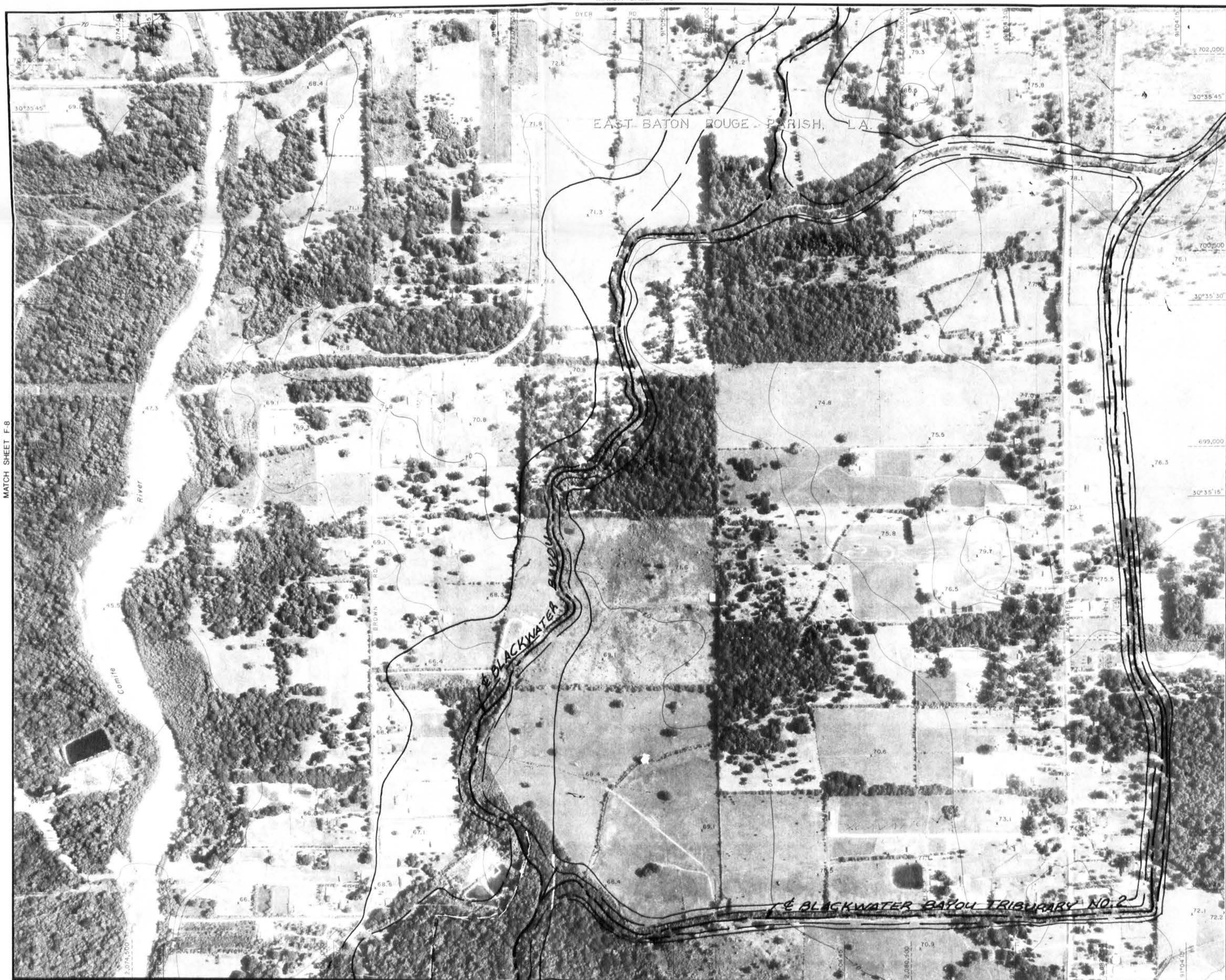
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-4,A-3

MATCH SHEET F-3

MATCH SHEET F-8



MATCH SHEET F-6

N

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:

INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS

PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS A-29 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-5 A-3

MATCH SHEET F-4

LEGEND

BLACKWATER BAYOU

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

BEAVER BAYOU

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA. POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

MATCH SHEET F-9

NOTE: ORIGINAL SHEET NO. IS A-30 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

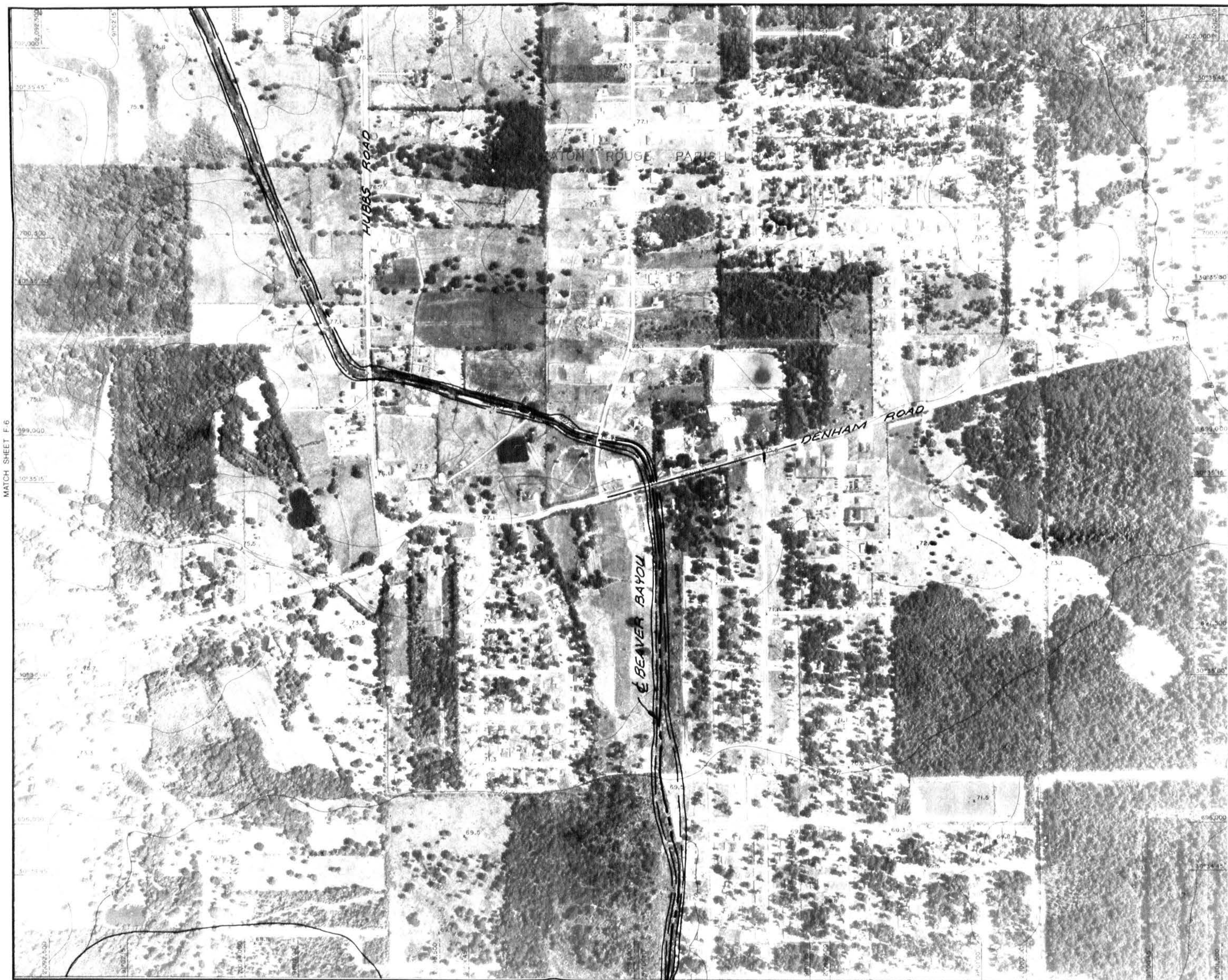
BLACKWATER BAYOU AND BEAVER BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-6,A-3



LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S.; NGS; LOUISIANA DEPARTMENT OF HIGHWAYS; LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 5 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS A-31 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
BEAVER BAYOU

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:

INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.

PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-1 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-8,A-3

LEGEND

BLACKWATER BAYOU
10 YEAR FLOOD WITHOUT PROJECT
10 YEAR FLOOD WITH PROJECT

BEAVER BAYOU
25 YEAR FLOOD WITHOUT PROJECT
25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S, NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET
300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA, POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS **B-2** AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES STUDY
COMITE RIVER BASIN

BLACKWATER BAYOU AND BEAVER BAYOU

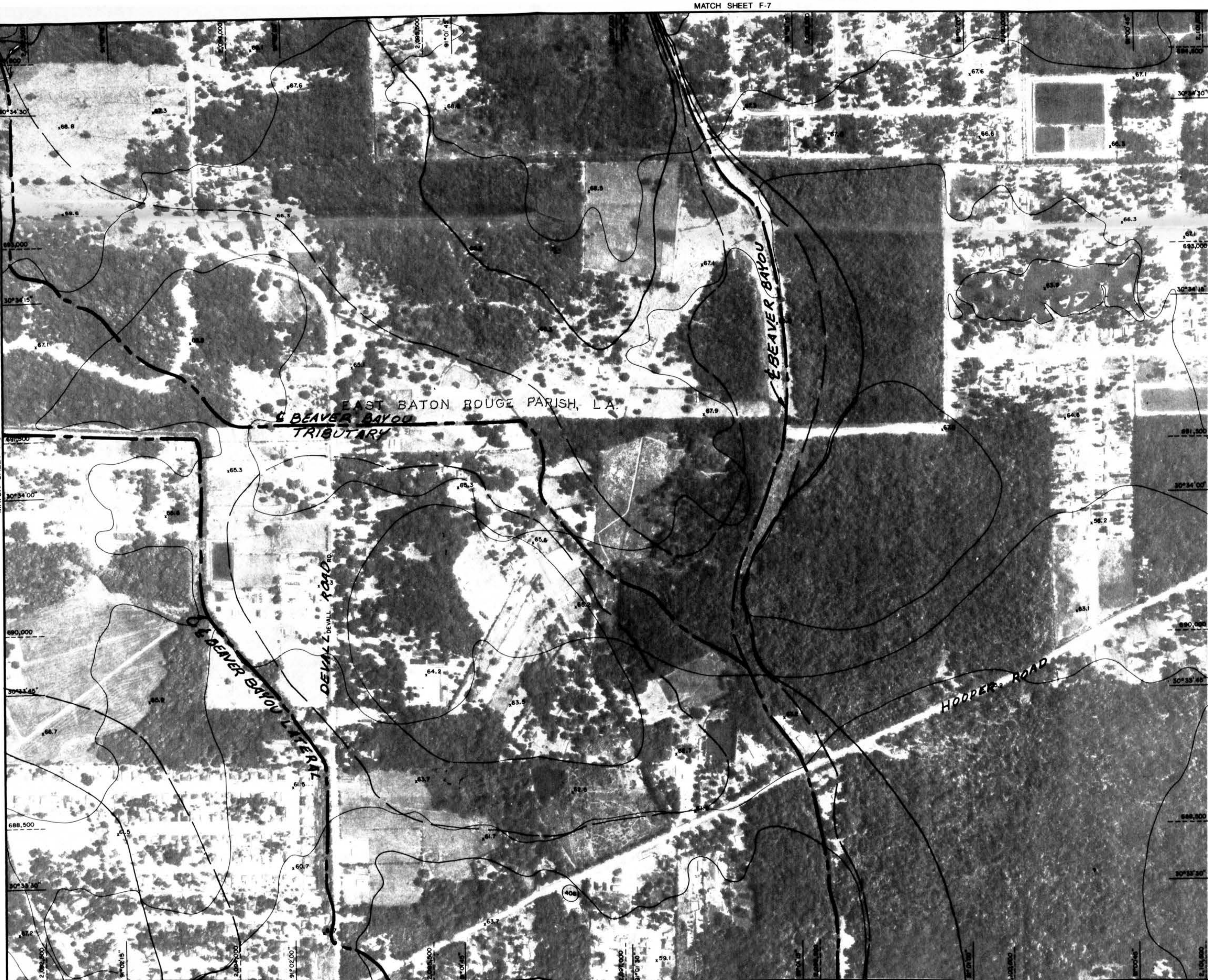
10 & 25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

DATE: SEPTEMBER 1994

PLATE F-9,A-3

MATCH SHEET F-7



MATCH SHEET F-13

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S, NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA, POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-3 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BEAVER BAYOU

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-10,A-3

MATCH SHEET F-8

MATCH SHEET F-12

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

10 YEAR WITHOUT PROJECT WITH COMITE DIVERSION

10 YEAR WITH PROJECT WITH COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA, POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

MATCH SHEET F-14

NOTE: ORIGINAL SHEET NO. IS B-7 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-11,A-3

MATCH SHEET F-9

MATCH SHEET F-11

MATCH SHEET F-13

N

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-8 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BLACKWATER BAYOU

10 YEAR OVERFLOW

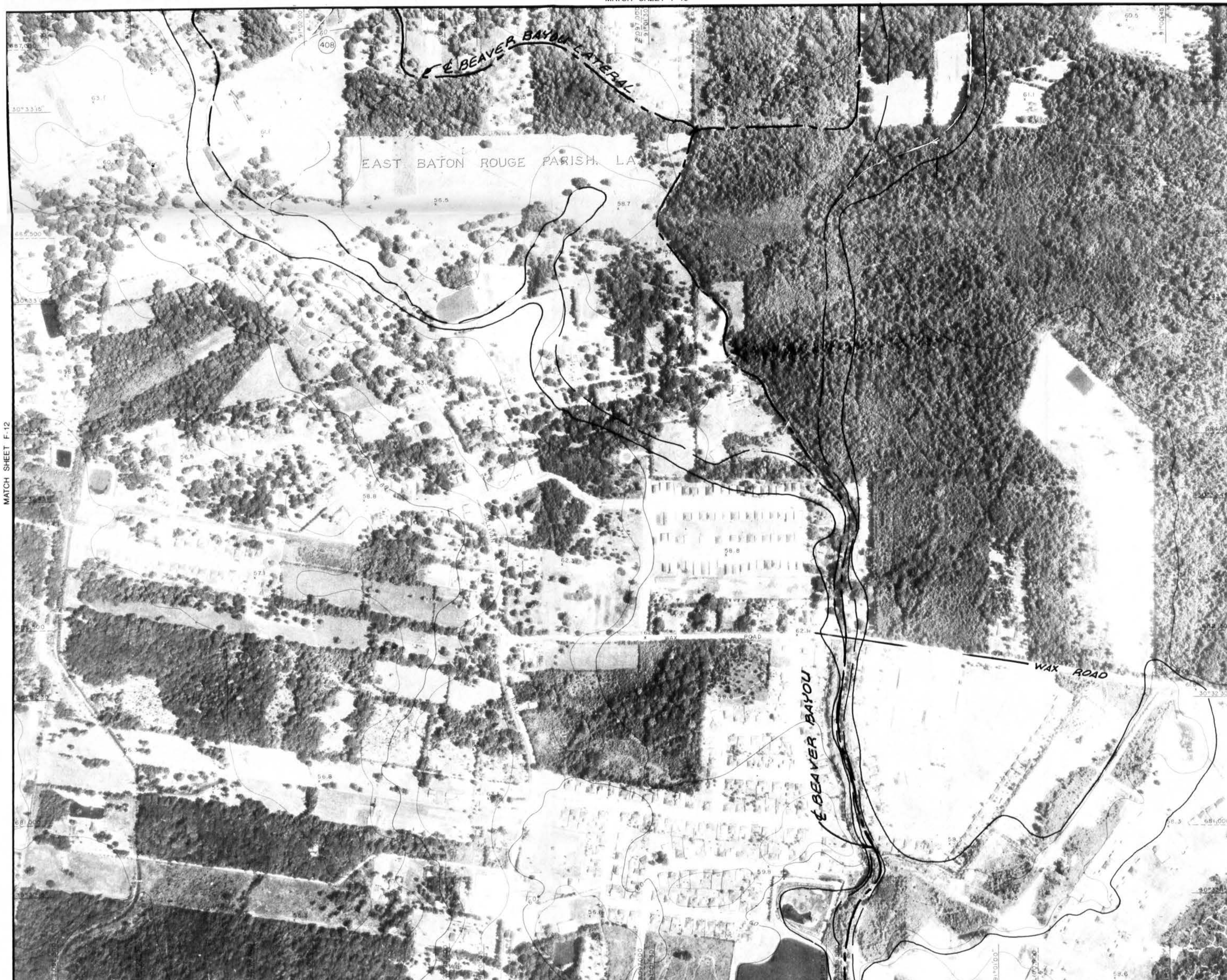
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-12,A-3

MATCH SHEET F-10

MATCH SHEET F-12



MATCH SHEET F-15

LEGEND

25 YEAR FLOOD WITHOUT PROJECT ————

25 YEAR FLOOD WITH PROJECT —— ——

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-9 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BEAVER BAYOU

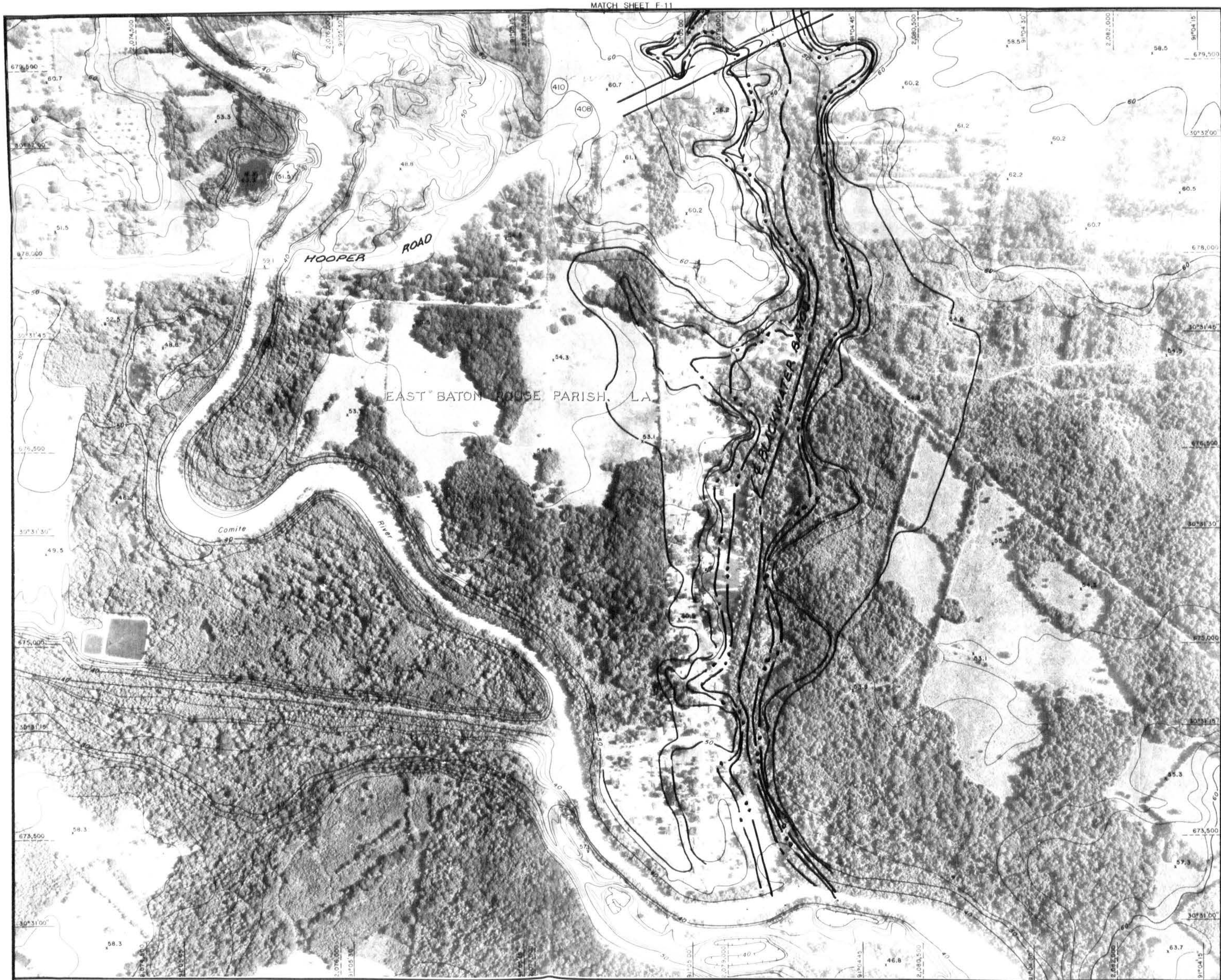
25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-13,A-3

MATCH SHEET F-11



LEGEND

10 YEAR FLOOD WITHOUT PROJECT
10 YEAR FLOOD WITH PROJECT
10 YEAR WITHOUT PROJECT WITH COMITE DIVERSION
10 YEAR WITH PROJECT WITH COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-13 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
BLACKWATER BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-13

MATCH SHEET F-16

N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA: POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-15 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
BEAVER BAYOU

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-15

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

MATCH SHEET F-17

NOTE: ORIGINAL SHEET NO. IS B-22 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
BEAVER BAYOU

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-16

N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

MATCH SHEET F-22

NOTE: ORIGINAL SHEET NO. IS B-28 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
BEAVER BAYOU

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:

INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.

PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

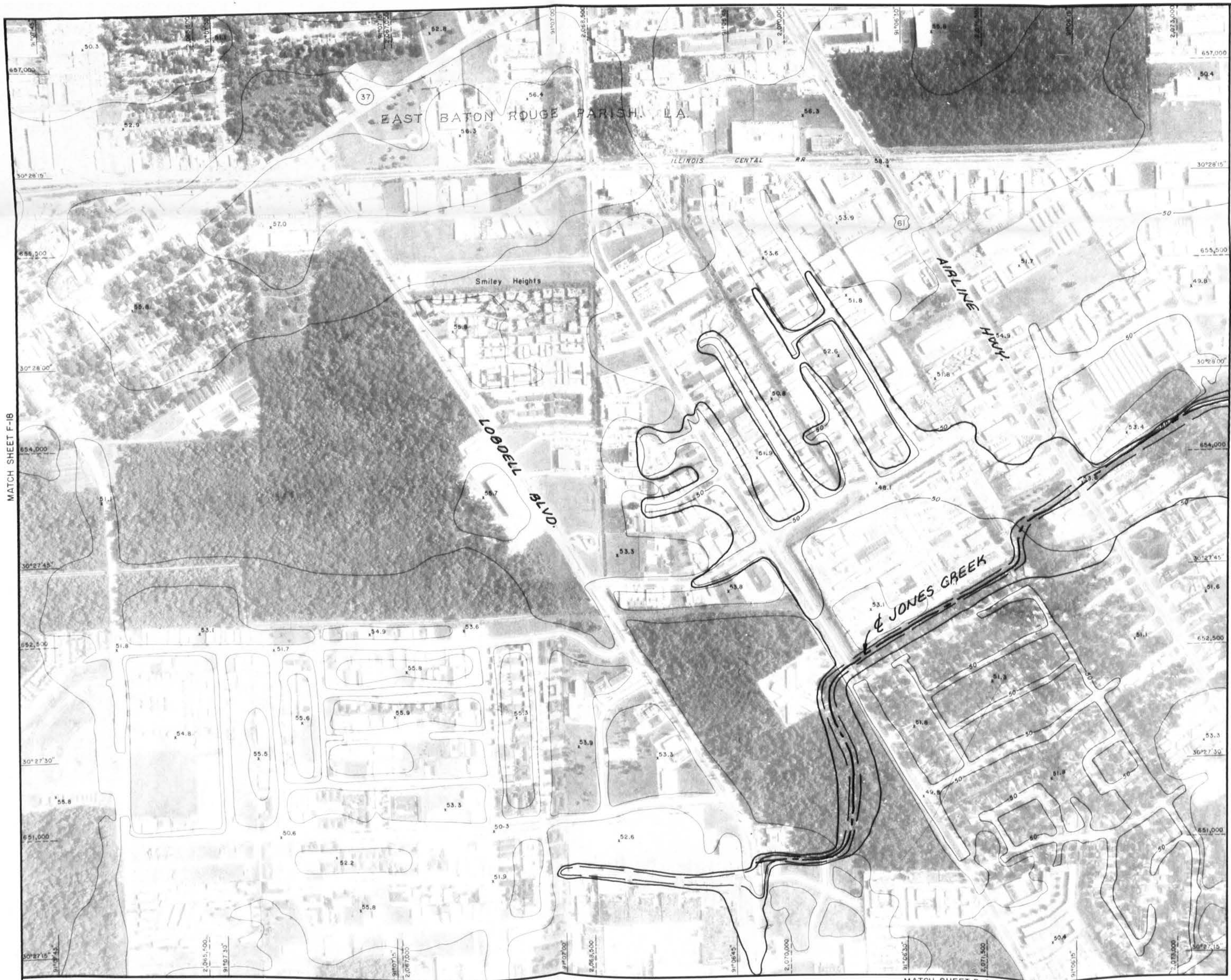
NOTE: ORIGINAL SHEET NO. IS B-30 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
WARD CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994



LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA, POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-31 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

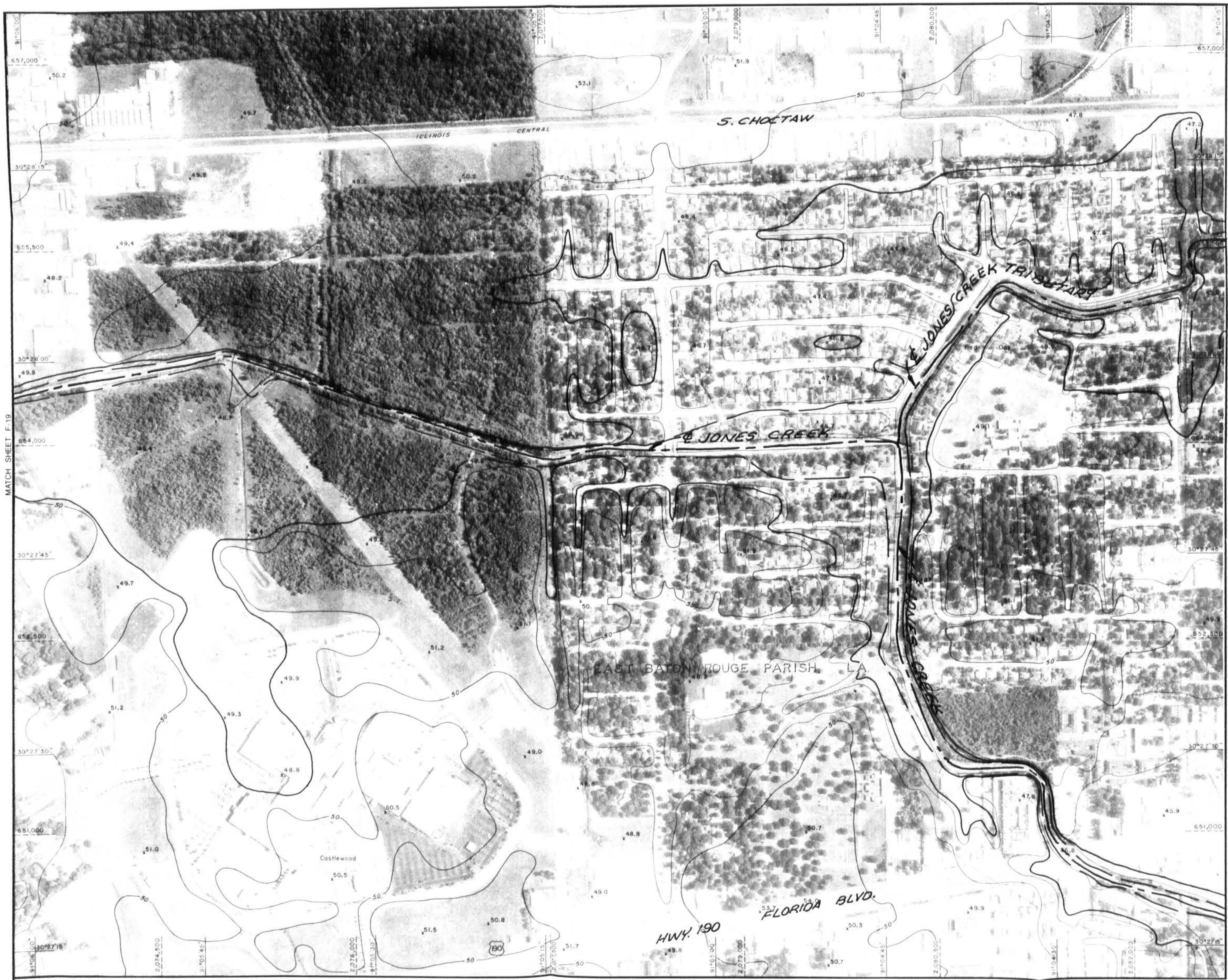
JONES CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-19,A-3



MATCH SHEET F-25

NOTE: ORIGINAL SHEET NO. IS B-32
AND THE FILE NO. IS H-8-30106.

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-33 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-17

MATCH SHEET F-27

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA: POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-34 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
JONES CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-18

MATCH SHEET F-24

N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note Contours in dense woods are less reliable than contours in open ground These contours should be treated as a "dashed" contour for mapping purposes

Note Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

MATCH SHEET F-29

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-37 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
WARD CREEK AND DAWSON CREEK

25 YEAR OVERFLOW

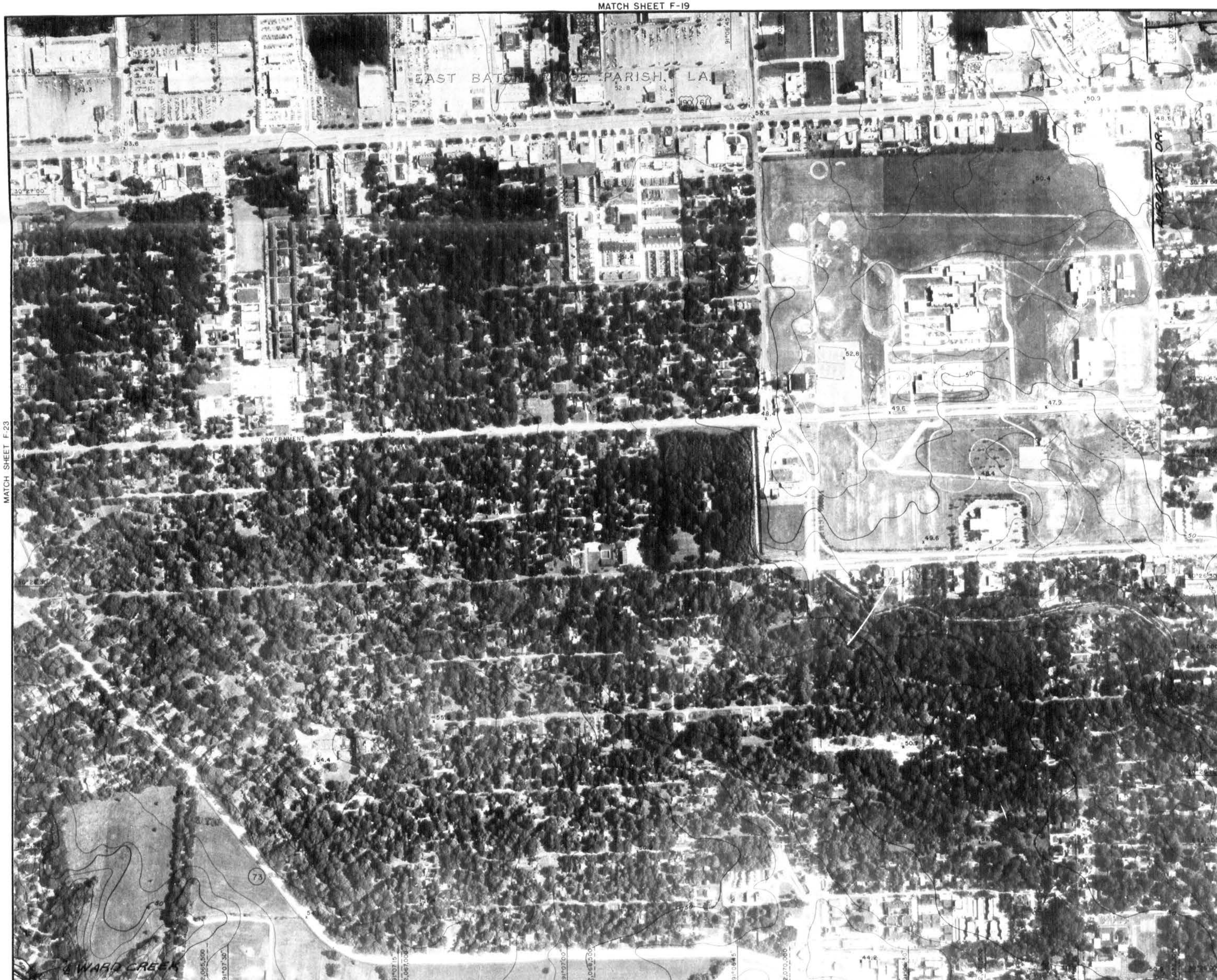
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-19

℄ NORTH BRANCH WARD CREEK

MATCH SHEET F-23



MATCH SHEET F-25

N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note Contours in dense woods are less reliable than contours in open ground These contours should be treated as a "dashed" contour for mapping purposes

Note Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours

MATCH SHEET F-30

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-38 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
WARD CREEK

25 YEAR OVERFLOW

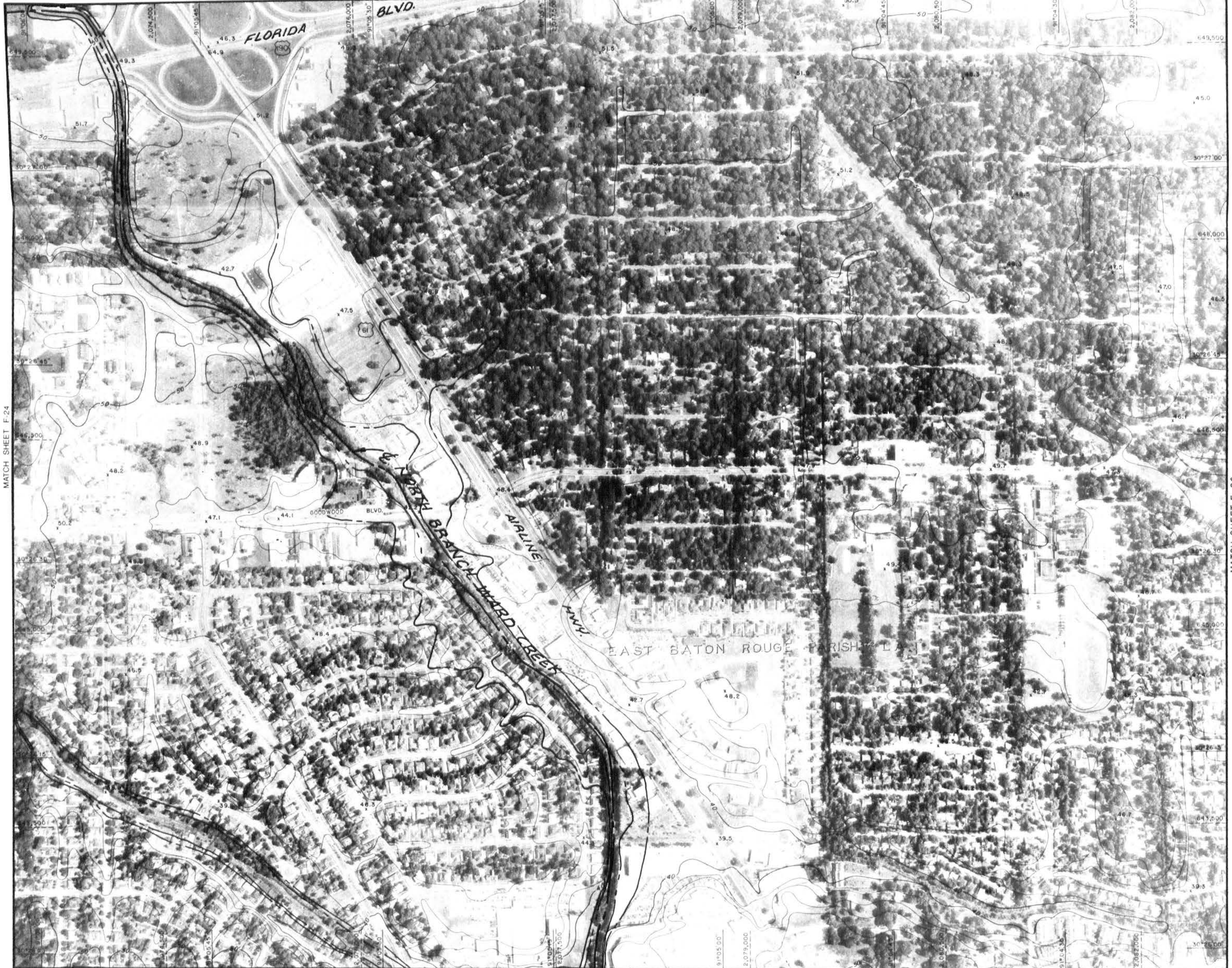
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-24,A-3

MATCH SHEET F-20

MATCH SHEET F-24



MATCH SHEET F-26

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

MATCH SHEET F-31

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-39 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

NORTH BRANCH WARD CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-21

MATCH SHEET F-32

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS 8-40 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-26, A-3

MATCH SHEET F-22

MATCH SHEET F-26

MATCH SHEET F-33

N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-41 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-27A-3

N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT
25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

MATCH SHEET F-36

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B–43 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU DUPLANTIER

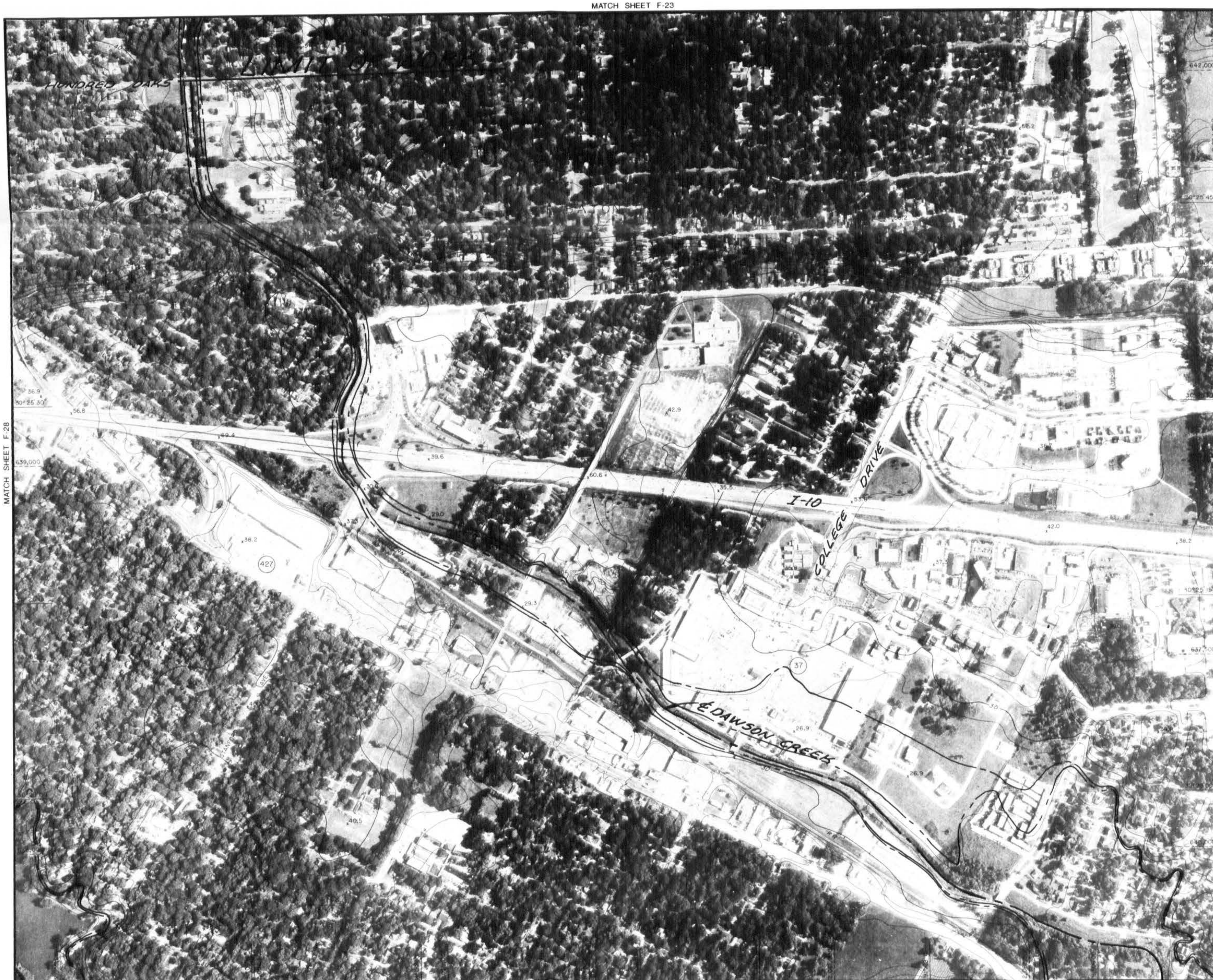
25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-23

MATCH SHEET F-28



MATCH SHEET F-30

N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

MATCH SHEET F-37

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-44 AND THE FILE NO. IS H-8-30106.

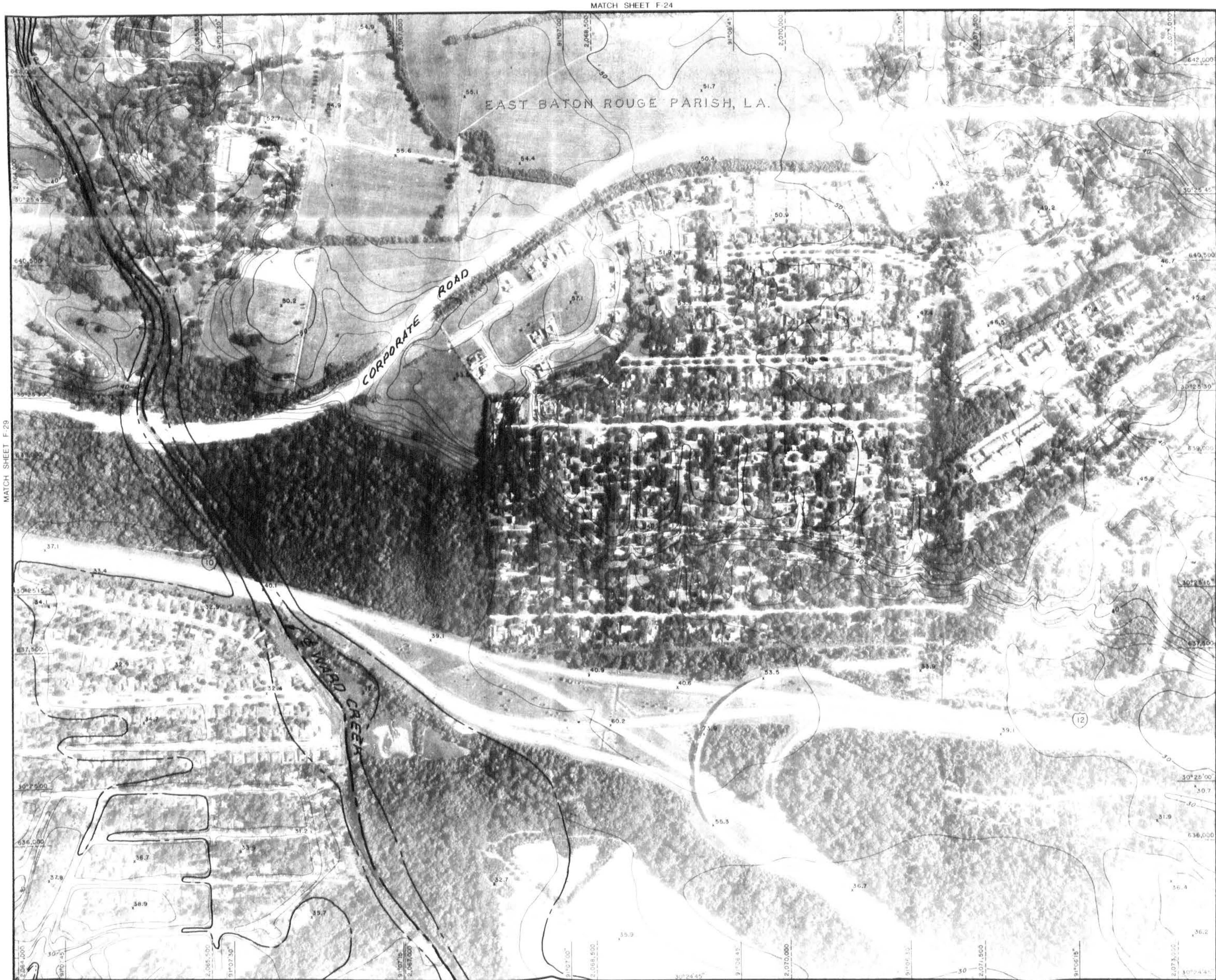
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
DAWSON CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-24



MATCH SHEET F-38

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-45 AND THE FILE NO. IS H-8-30106

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK

25 YEAR OVERFLOW

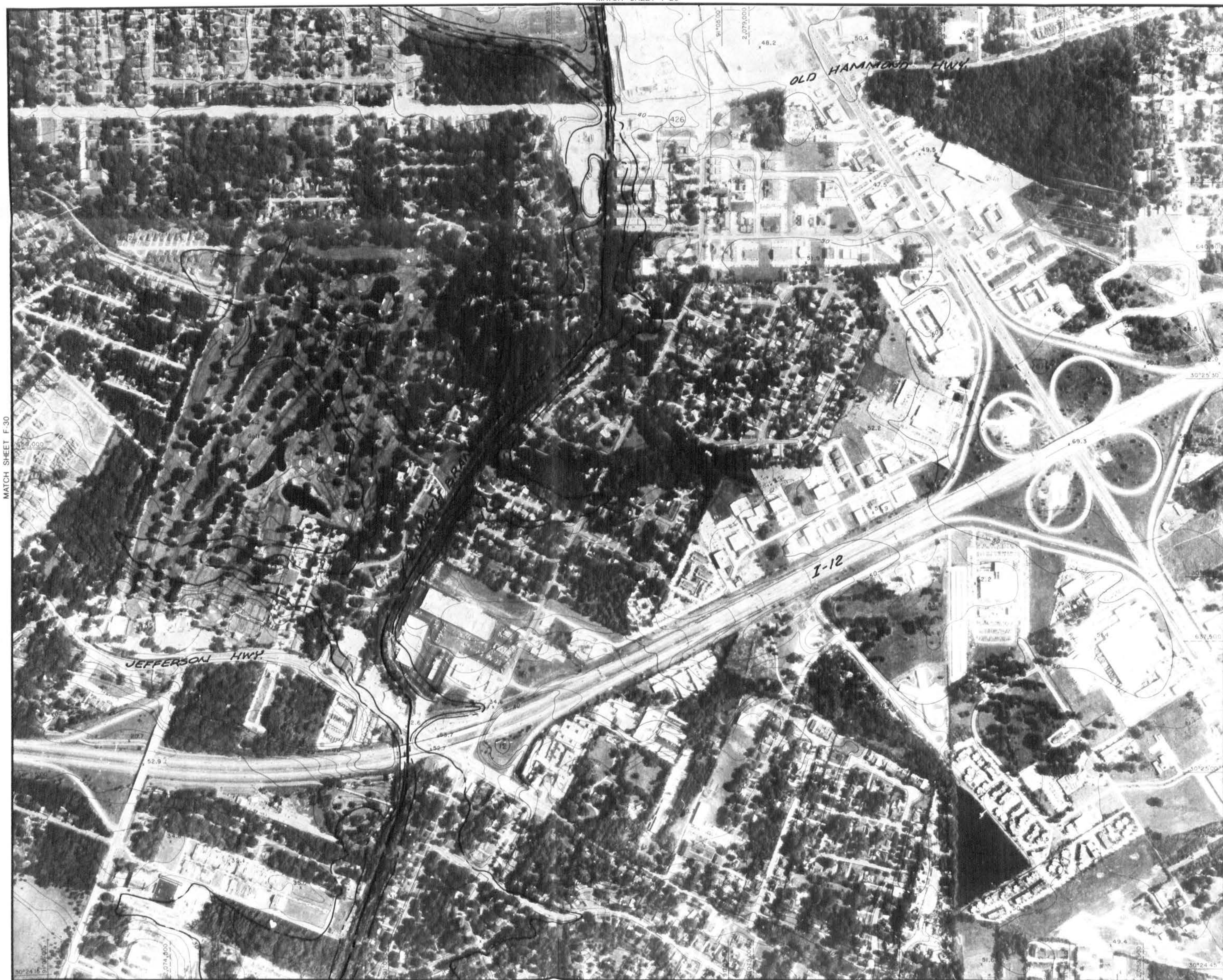
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-30,A-3

MATCH SHEET F-25

MATCH SHEET F-30



MATCH SHEET F-32

MATCH SHEET F-39

N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-46 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

NORTH BRANCH WARD CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-26

LEGEND

25 YEAR FLOOD WITHOUT PROJECT ————

25 YEAR FLOOD WITH PROJECT — —

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA, POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-47 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
JONES CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-32,A-3

MATCH SHEET F-27

MATCH SHEET F-32

MATCH SHEET F-34

MATCH SHEET F-41

N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B–48 AND THE FILE NO. IS H-8-30106.

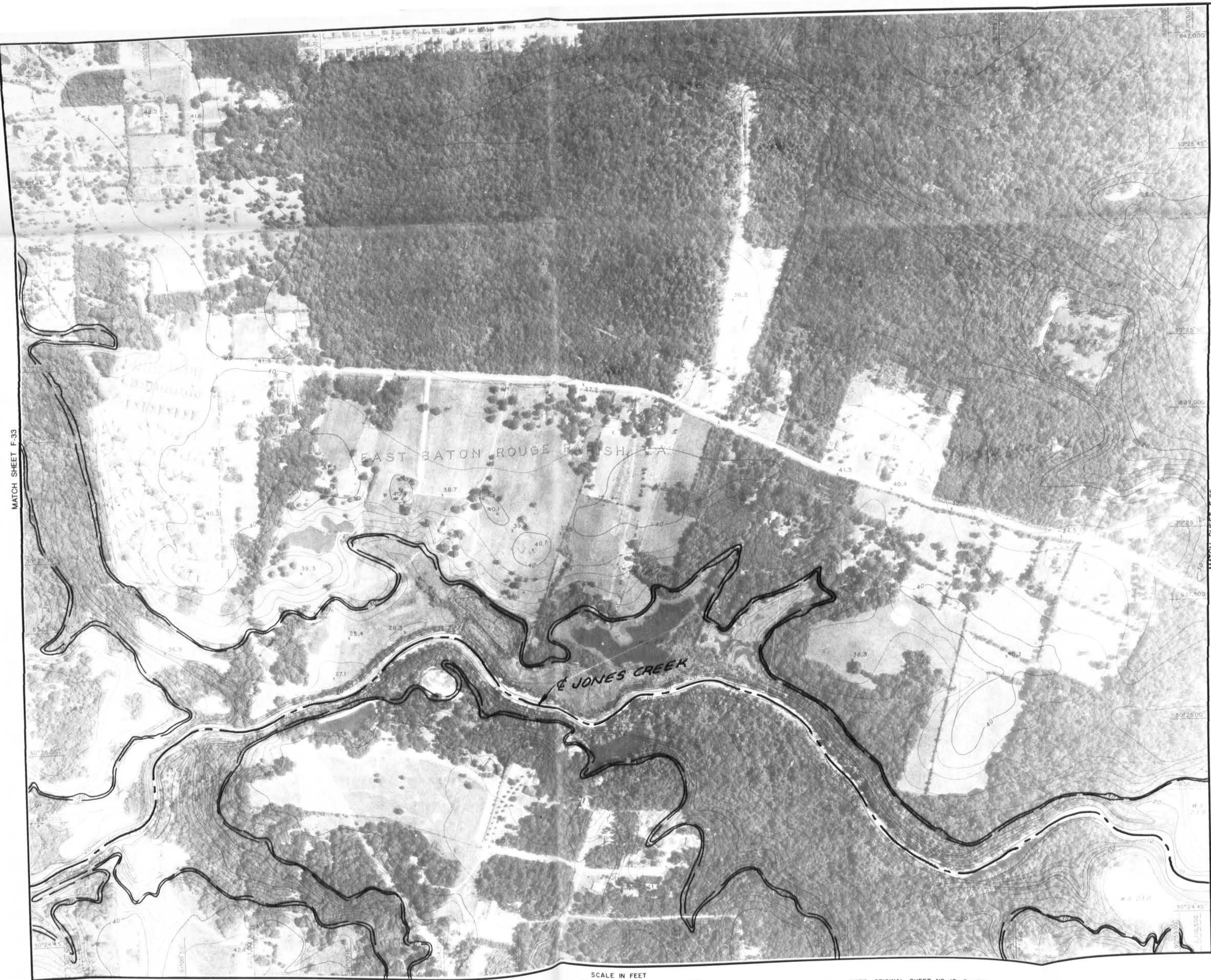
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994



N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S, NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA, POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-49 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
JONES CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a dashed contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS C-40 AND THE FILE NO. IS H-8-30106.

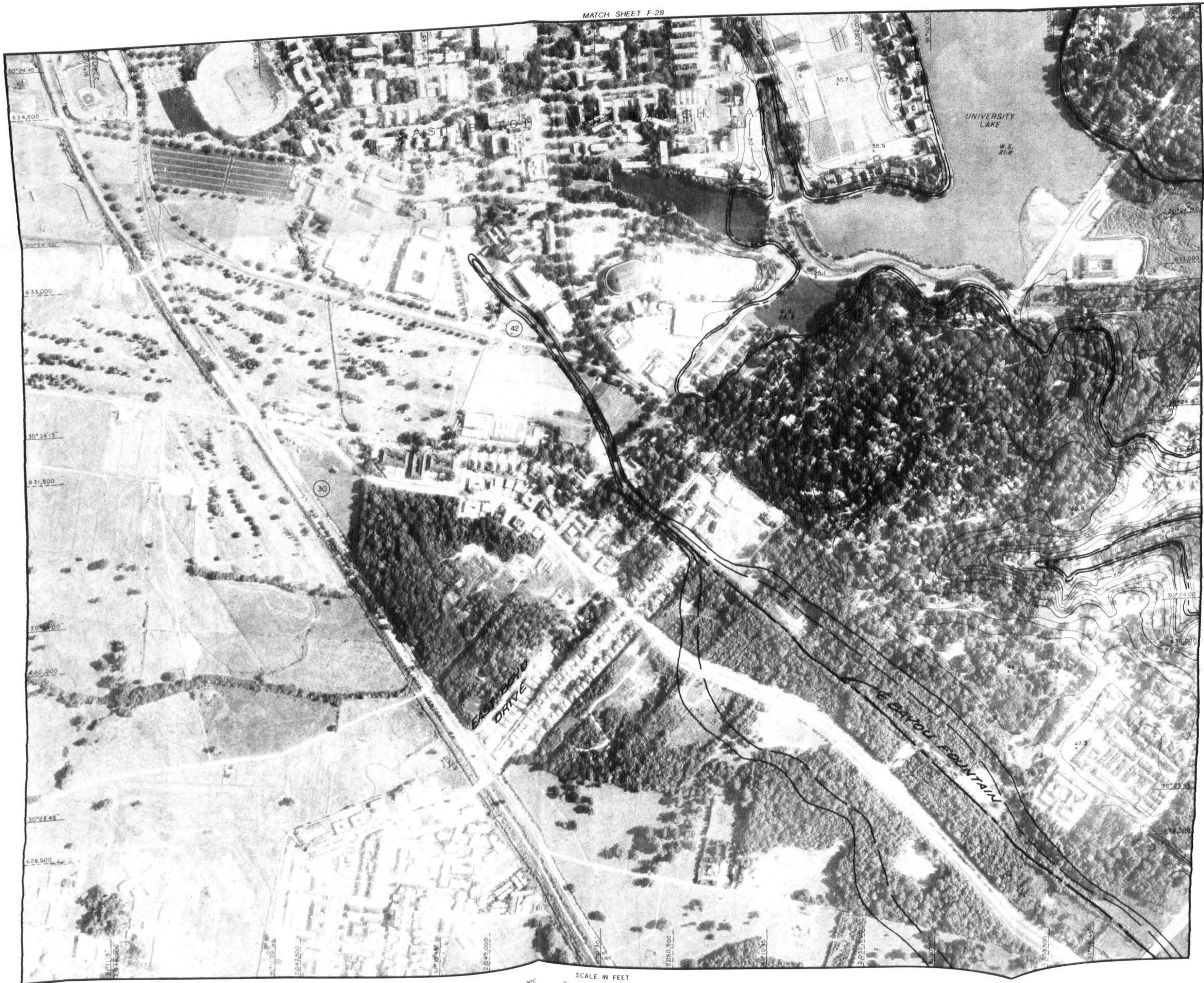
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
JONES CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-35,A-3



LEGEND

BAYOU DUPLANTIER
25 YEAR FLOOD WITHOUT PROJECT
25 YEAR FLOOD WITH PROJECT
BAYOU FOUNTAIN
10 YEAR FLOOD WITHOUT PROJECT
10 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-50 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN AND BAYOU DUPLANTIER

25 & 10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-29

MATCH SHEET F-36

MATCH SHEET F-38

MATCH SHEET F-43

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-51 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

DAWSON CREEK AND BAYOU DUPLANTIER

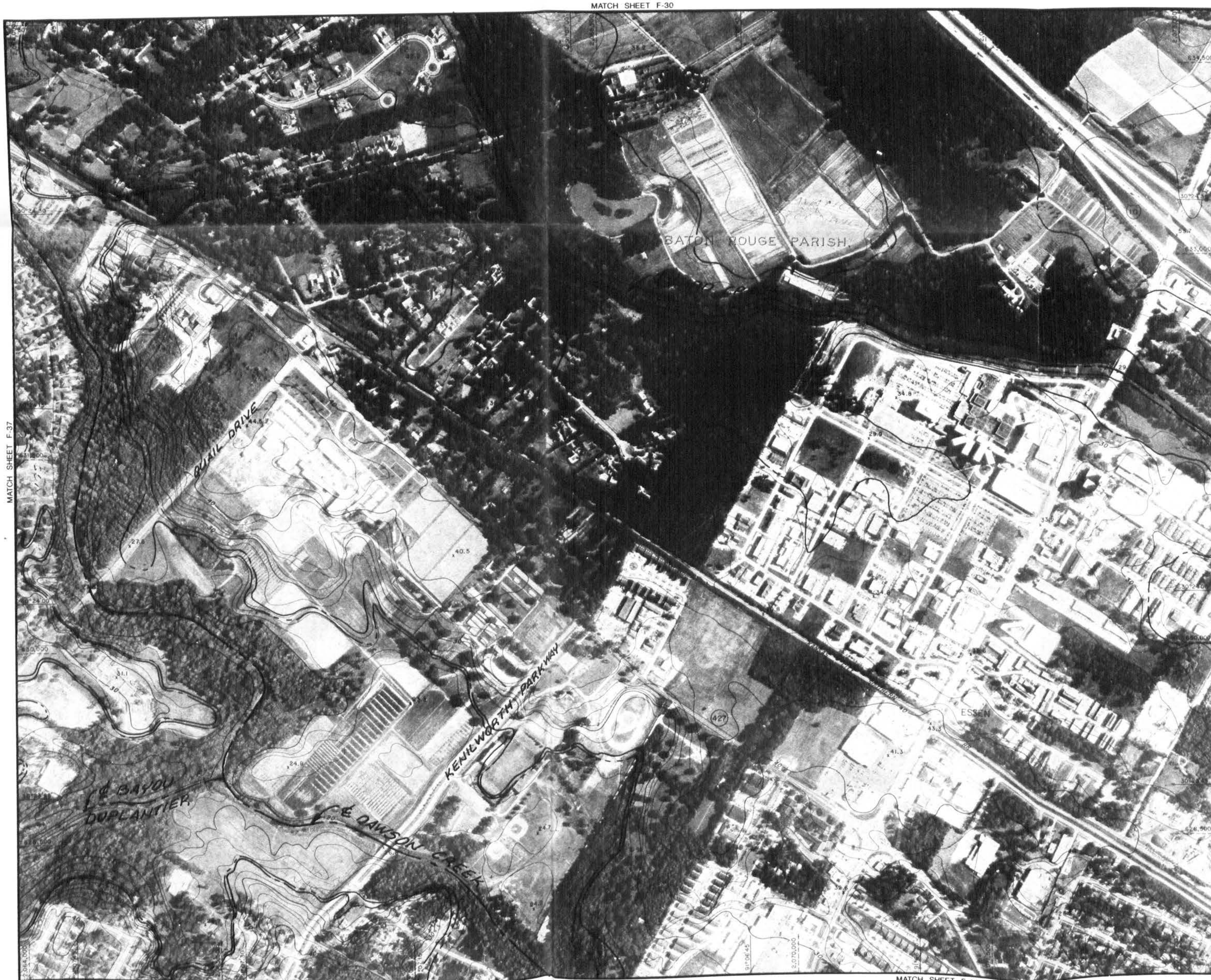
25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-30

MATCH SHEET F-37



MATCH SHEET F-39

MATCH SHEET F-44

N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT	——— – ———
25 YEAR FLOOD WITH PROJECT	——— – – ———

Note: Contours in dense woods are less reliable than contours on open ground These contours should be treated as a "dashed" contour for mapping purposes

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B–52 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK, DAWSON CREEK AND BAYOU DUPLANTIER

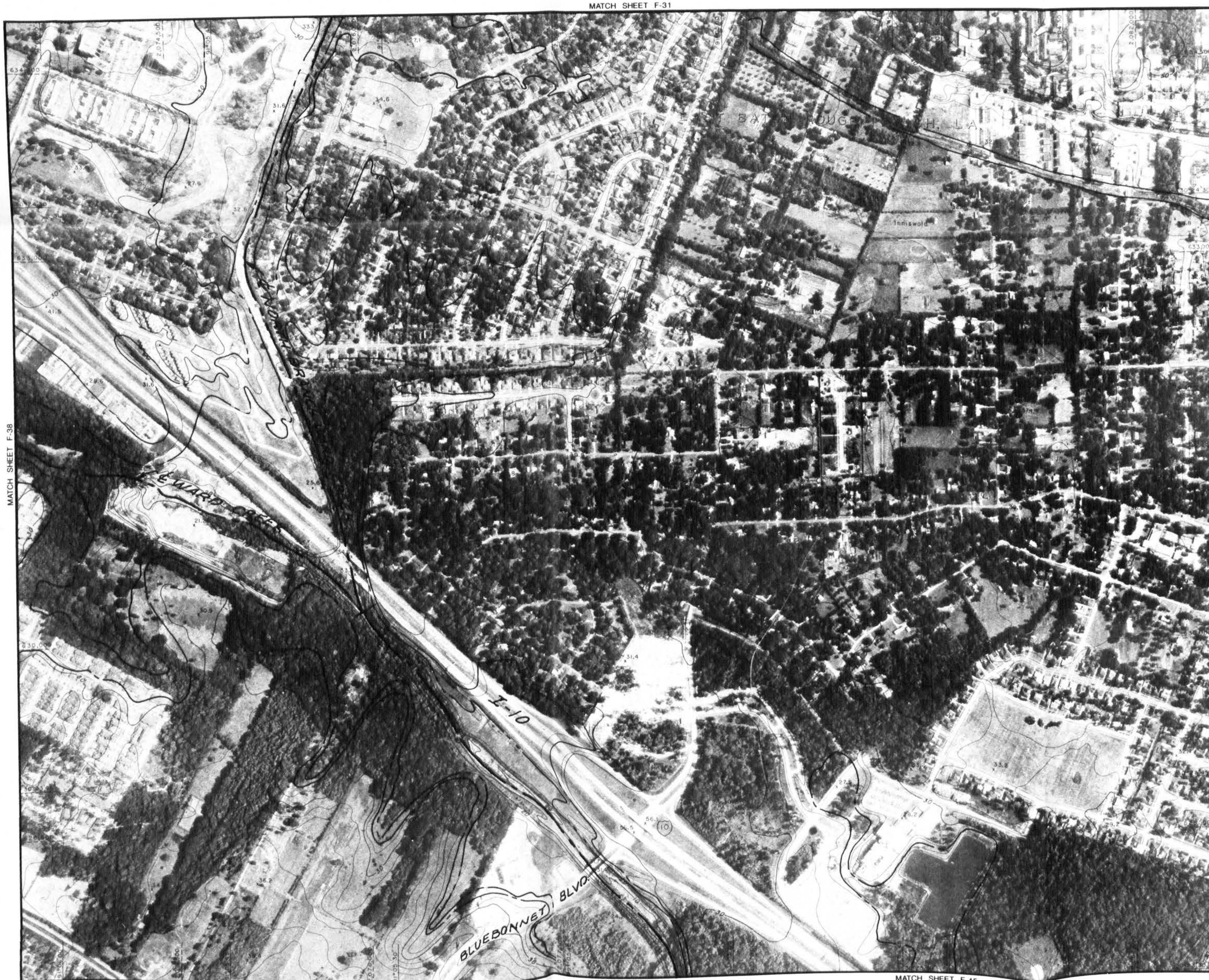
25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-38,A-3

MATCH SHEET F-31



N

LEGEND

WARD CREEK
25 YEAR FLOOD WITHOUT PROJECT
25 YEAR FLOOD WITH PROJECT
CLAY CUT BAYOU, BAYOU FOUNTAIN
10 YEAR FLOOD WITHOUT PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-53 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

CLAY CUT BAYOU, WARD CREEK AND NORTH BRANCH WARD CREEK

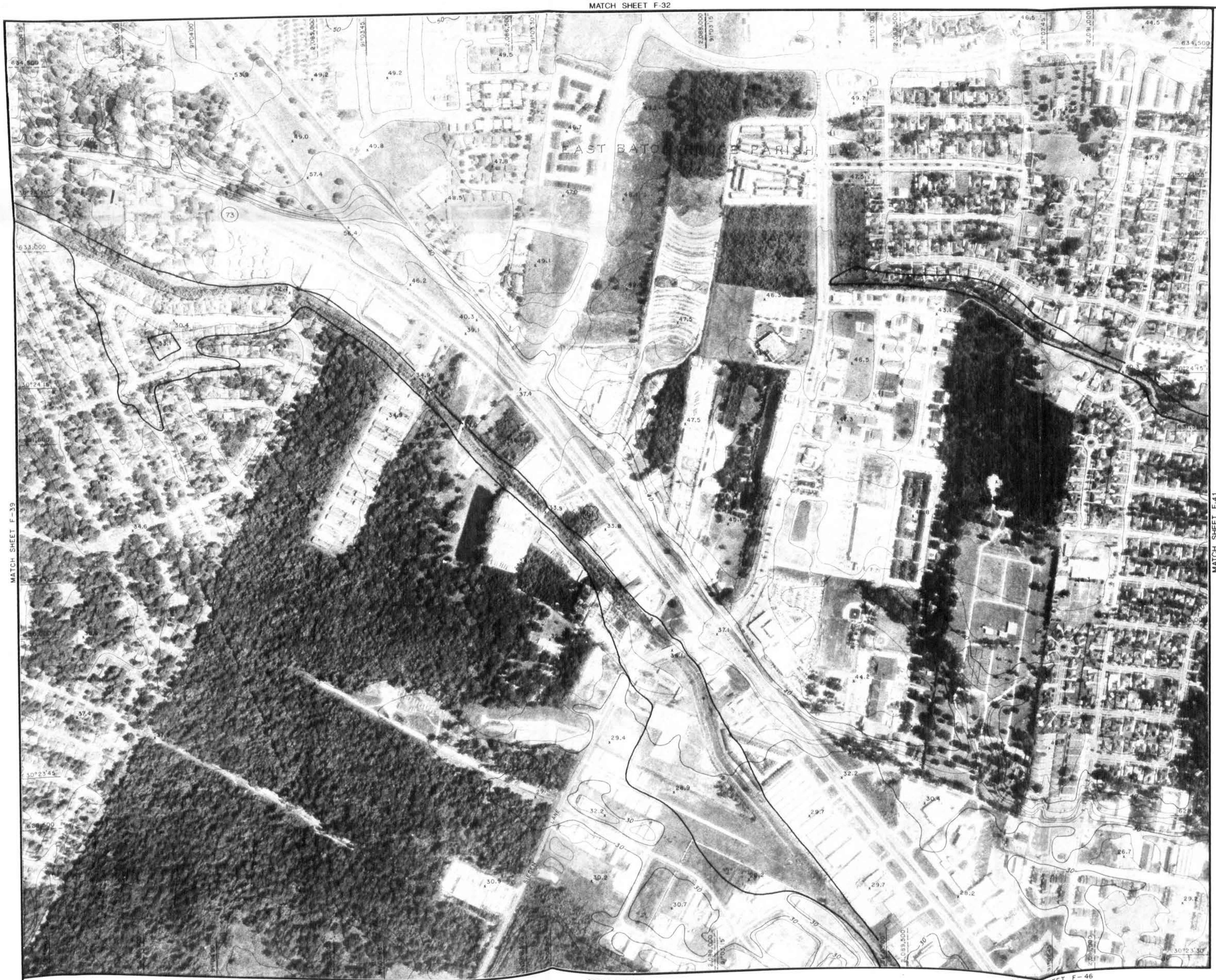
25 & 10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-39,A-3

MATCH SHEET F-32



LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
CLAY CUT BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B–54 AND THE FILE NO. IS H-8-30106.

MATCH SHEET F-33

MATCH SHEET F-40

MATCH SHEET F-47

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-55 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
CLAY CUT BAYOU

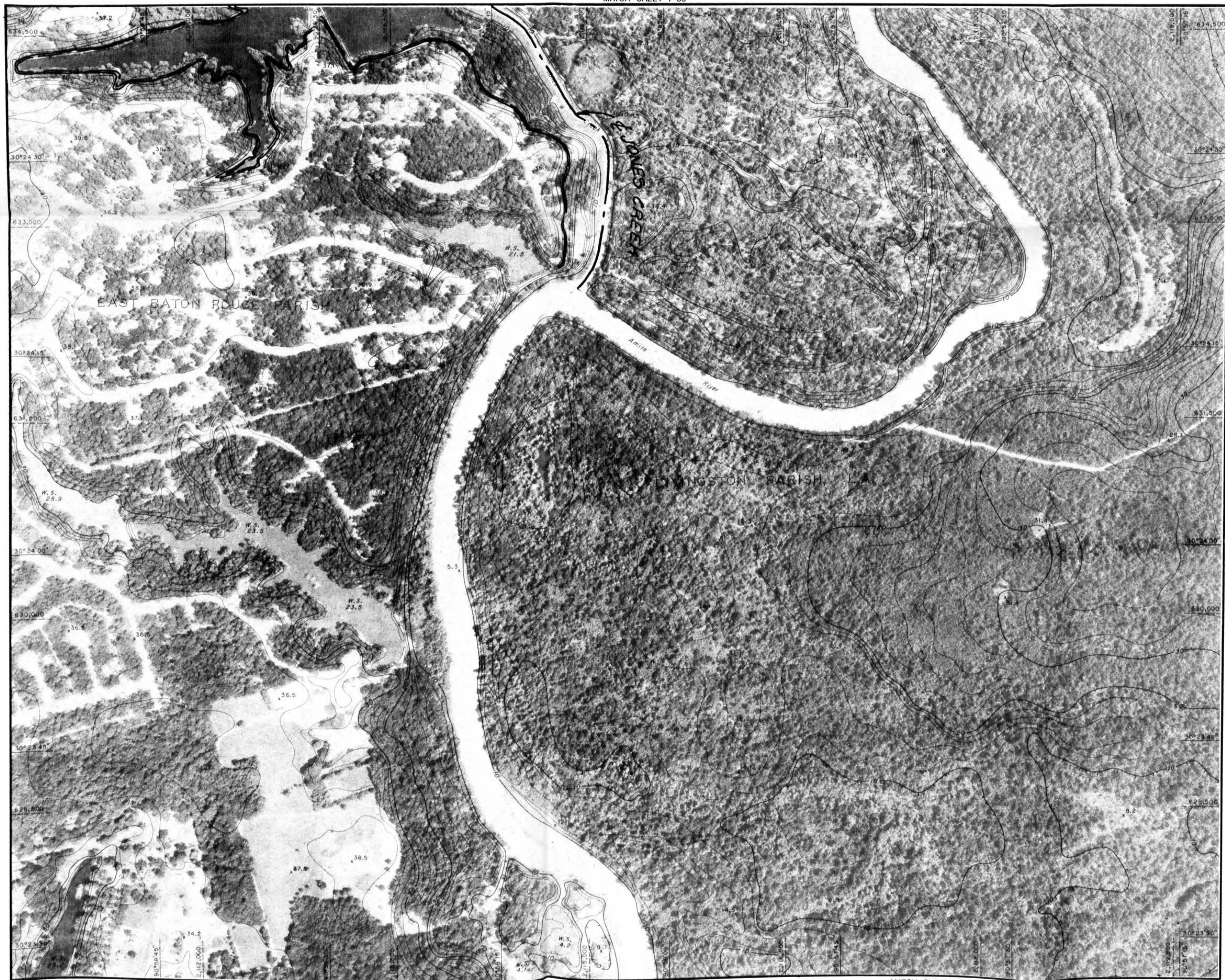
10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-41,A-3

MATCH SHEET F-35



MATCH SHEET F-49

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S, NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS C-43 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

JONES CREEK

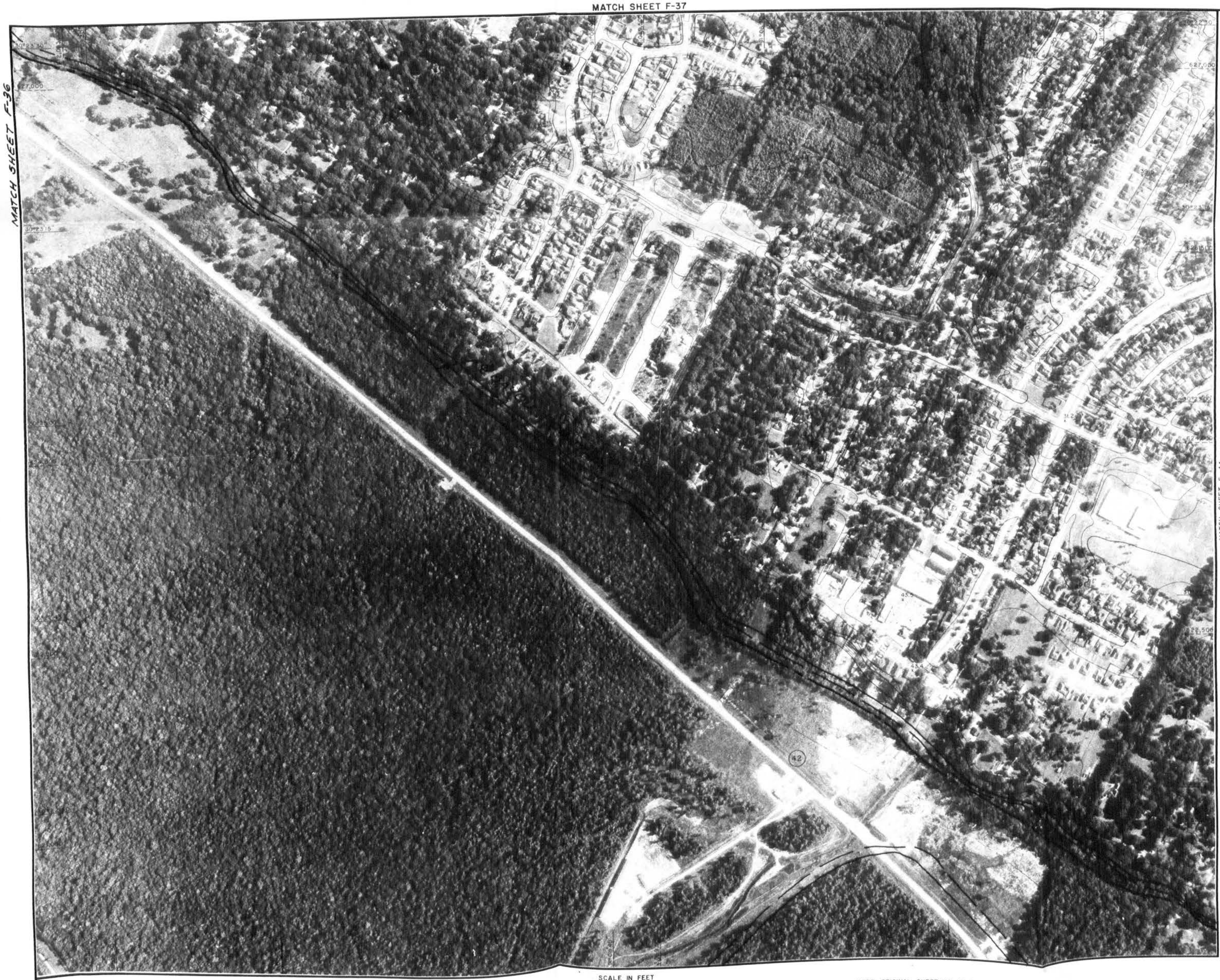
25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-37

MATCH SHEET F-36



MATCH SHEET F-44

N

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

Note Contours in dense woods are less reliable than contours on open ground These contours should be treated as a "dashed" contour for mapping purposes

Note Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA, POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-57 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
BAYOU FOUNTAIN

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-38

MATCH SHEET F-43

MATCH SHEET F-45

MATCH SHEET F-50

LEGEND

DAWSON CREEK

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

BAYOU FOUNTAIN

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground These contours should be treated as a "dashed" contour for mapping purposes

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S, NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-58 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN AND DAWSON CREEK

25 & 10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-44,A-3

MATCH SHEET F-39

MATCH SHEET F-44

MATCH SHEET F-46

MATCH SHEET F-51

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA, POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-59 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK AND DAWSON CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-45,A-3

MATCH SHEET F-40

MATCH SHEET F-45

MATCH SHEET F-47

MATCH SHEET F-52

LEGEND

WARD CREEK
25 YEAR FLOOD WITHOUT PROJECT
25 YEAR FLOOD WITH PROJECT
CLAY CUT BAYOU
10 YEAR FLOOD WITHOUT PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S, NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET
300 0 300 600 900

NOTE: ORIGINAL SHEET NO. IS **B-60**
AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
CLAY CUT BAYOU AND WARD CREEK

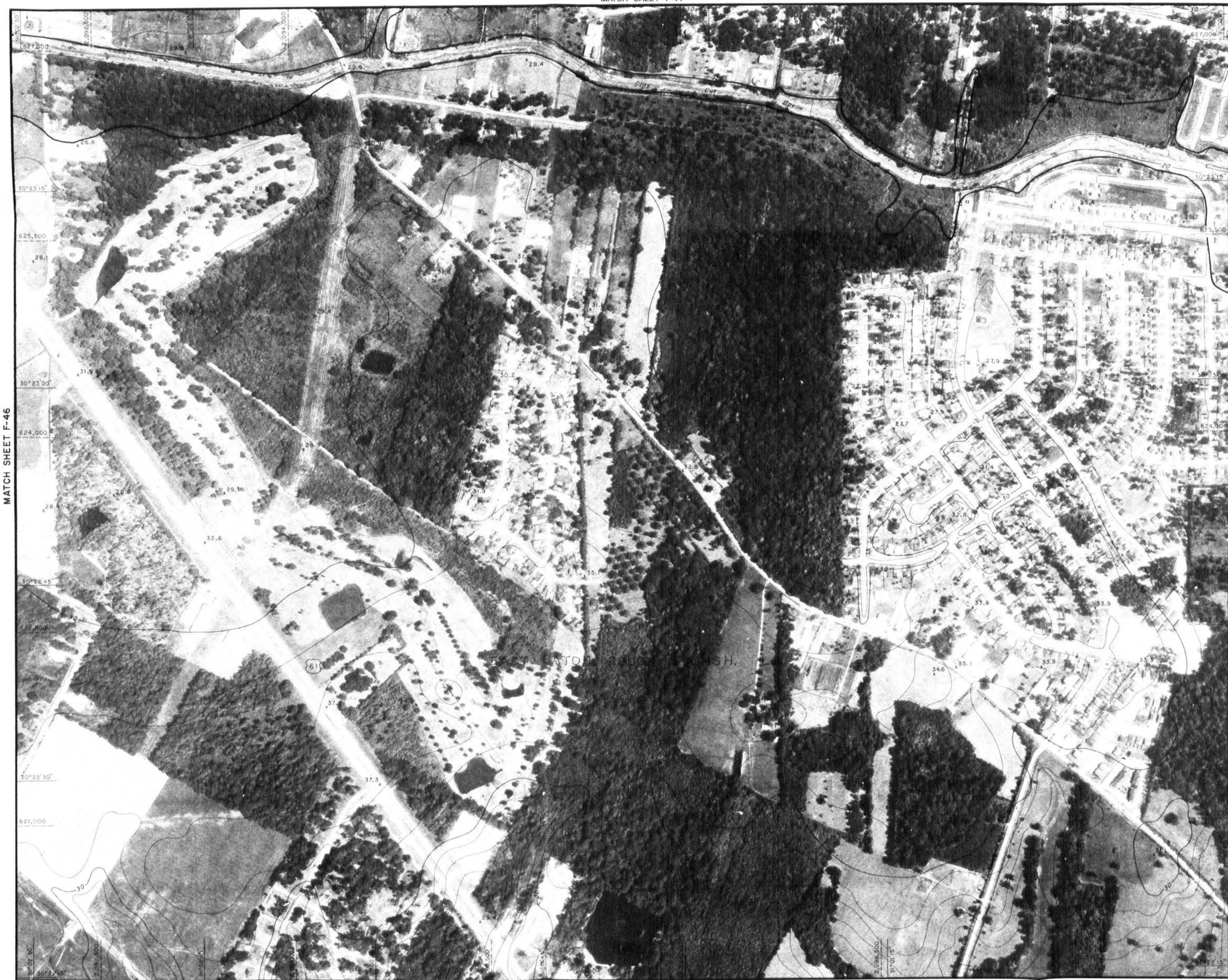
25 & 10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-46,A-3

MATCH SHEET F-41



MATCH SHEET F-53

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

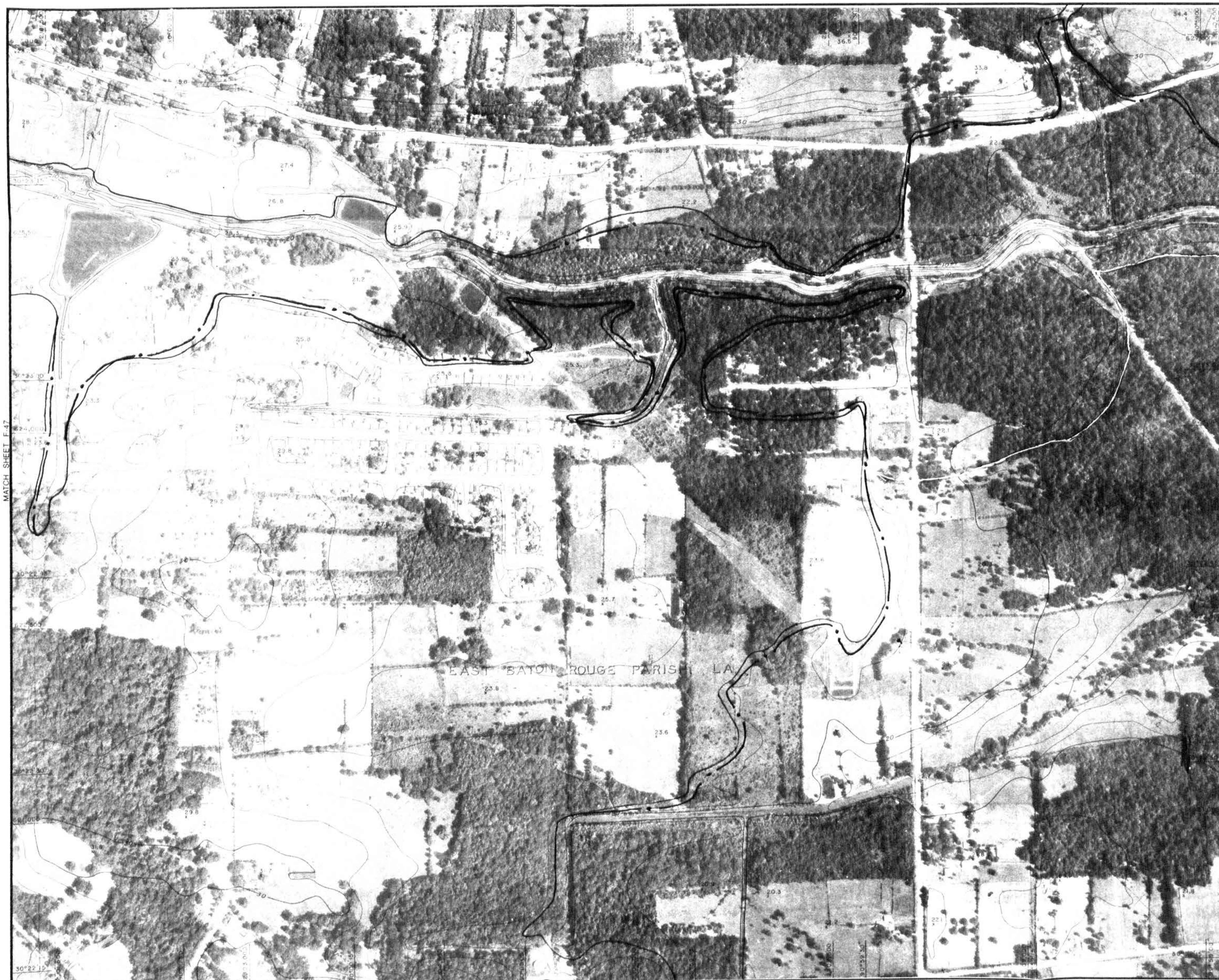
NOTE: ORIGINAL SHEET NO. IS B-61 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
CLAY CUT BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994



LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR WITH COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986.

NOTE: ORIGINAL SHEET NO. IS B-62 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
CLAY CUT BAYOU

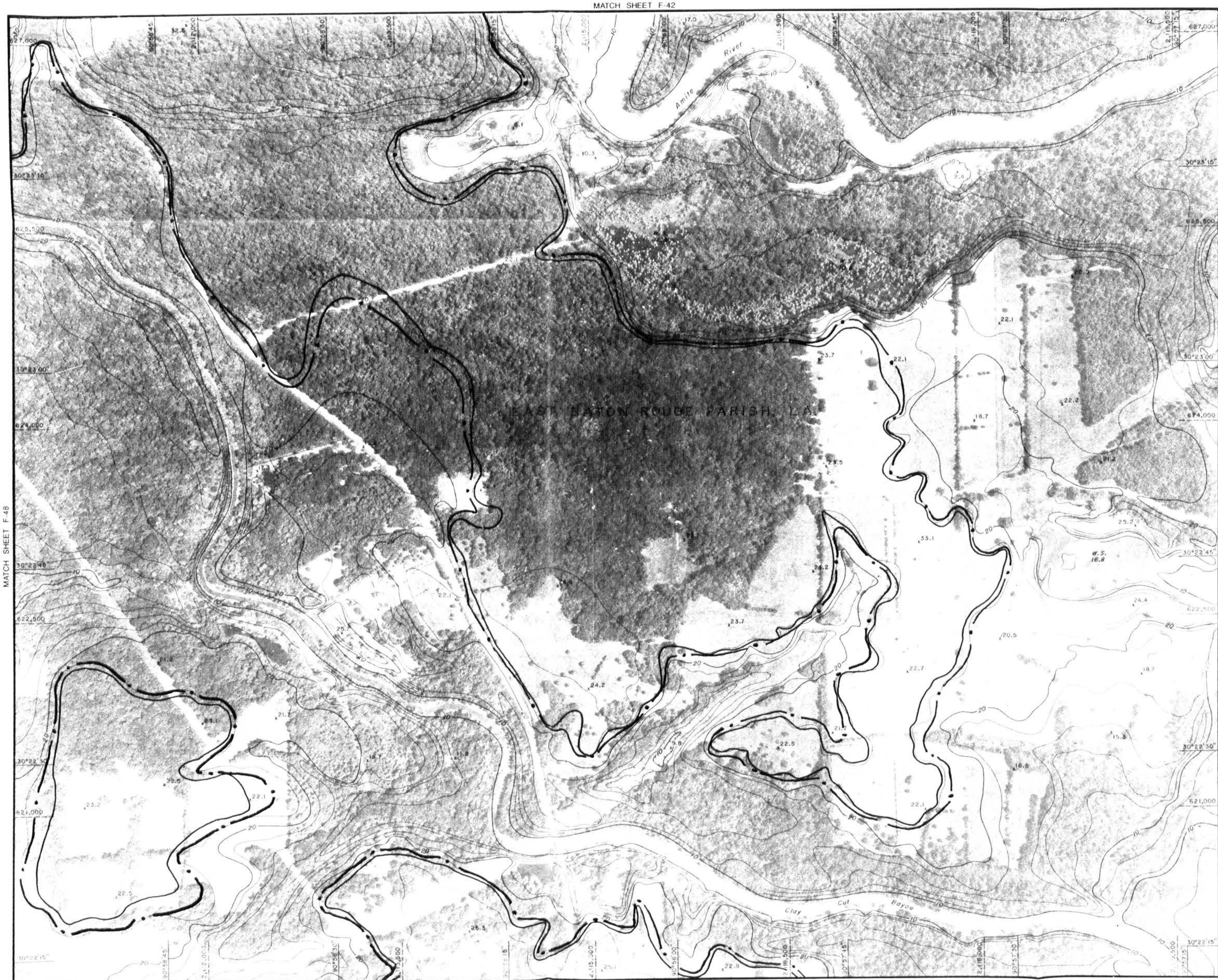
10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-48,A-3

MATCH SHEET F-42



LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH DIVERSION

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as "dashed" contours for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE RMS RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:

INSIDE THE PLAN AREA POLYCONIC PROJECTION 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.

PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS C-47 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
CLAY CUT BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-44

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S, NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B–63 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-50 A-3

MATCH SHEET F-45

MATCH SHEET F-55

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE RMS RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986.

NOTE: ORIGINAL SHEET NO. IS B-64 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-46

MATCH SHEET F-51

MATCH SHEET F-53

MATCH SHEET F-56

LEGEND

WARD CREEK
25 YEAR FLOOD WITHOUT PROJECT
25 YEAR FLOOD WITH PROJECT
BAYOU FOUNTAIN
10 YEAR FLOOD WITHOUT PROJECT
10 YEAR FLOOD WITH PROJECT
FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note Contours in dense woods are less reliable than contours in open ground. These contours should be treated as "dashed" contour for mapping purposes.

Note Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE RMS RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES

INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-65
AND THE FILE NO. IS H-8-30106

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU FOUNTAIN AND WARD CREEK

25 & 10 YEAR OVERFLOW

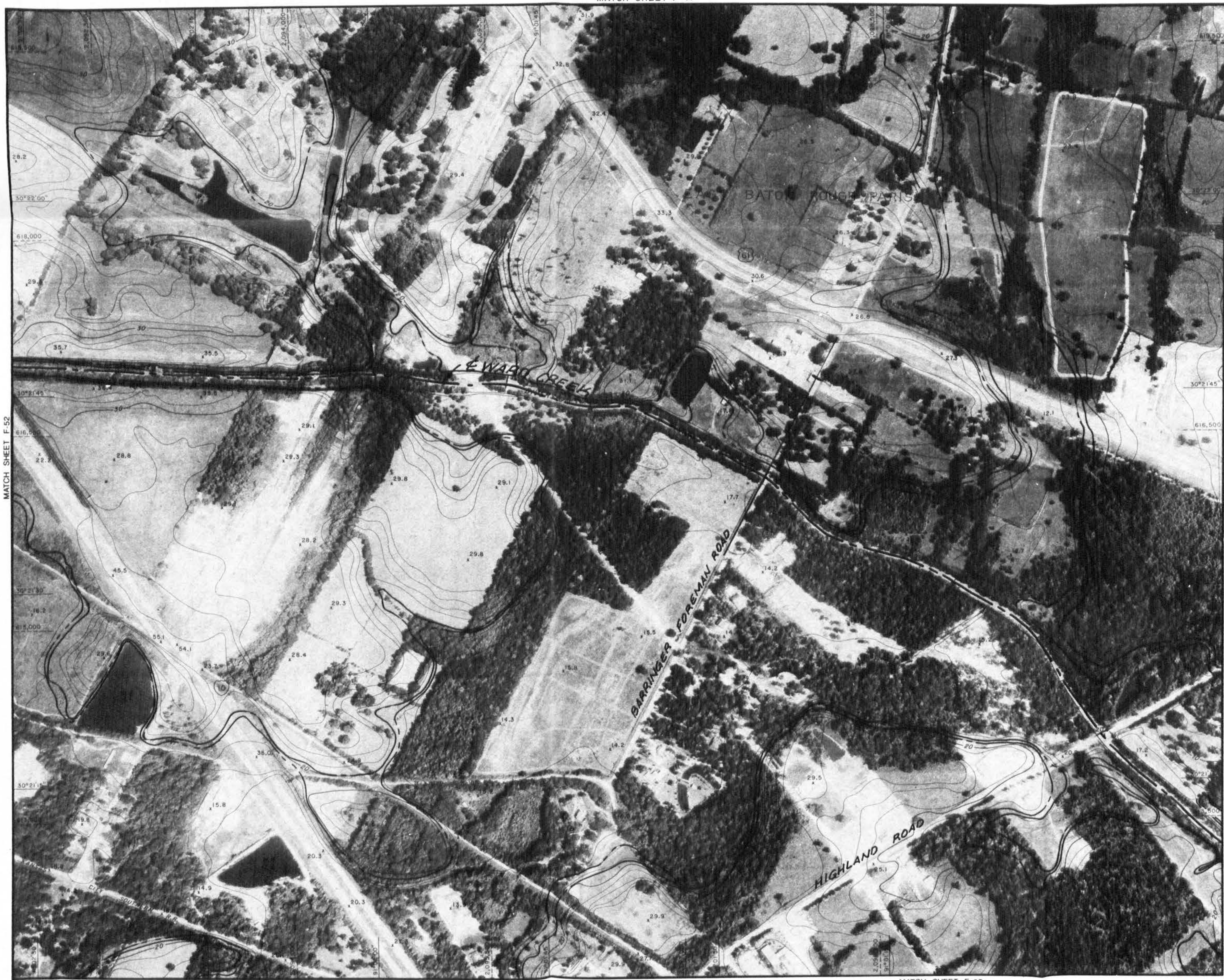
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE SEPTEMBER 1994

PLATE F-52, A-3

MATCH SHEET F-47

MATCH SHEET F-52



MATCH SHEET F-54

MATCH SHEET F-59

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

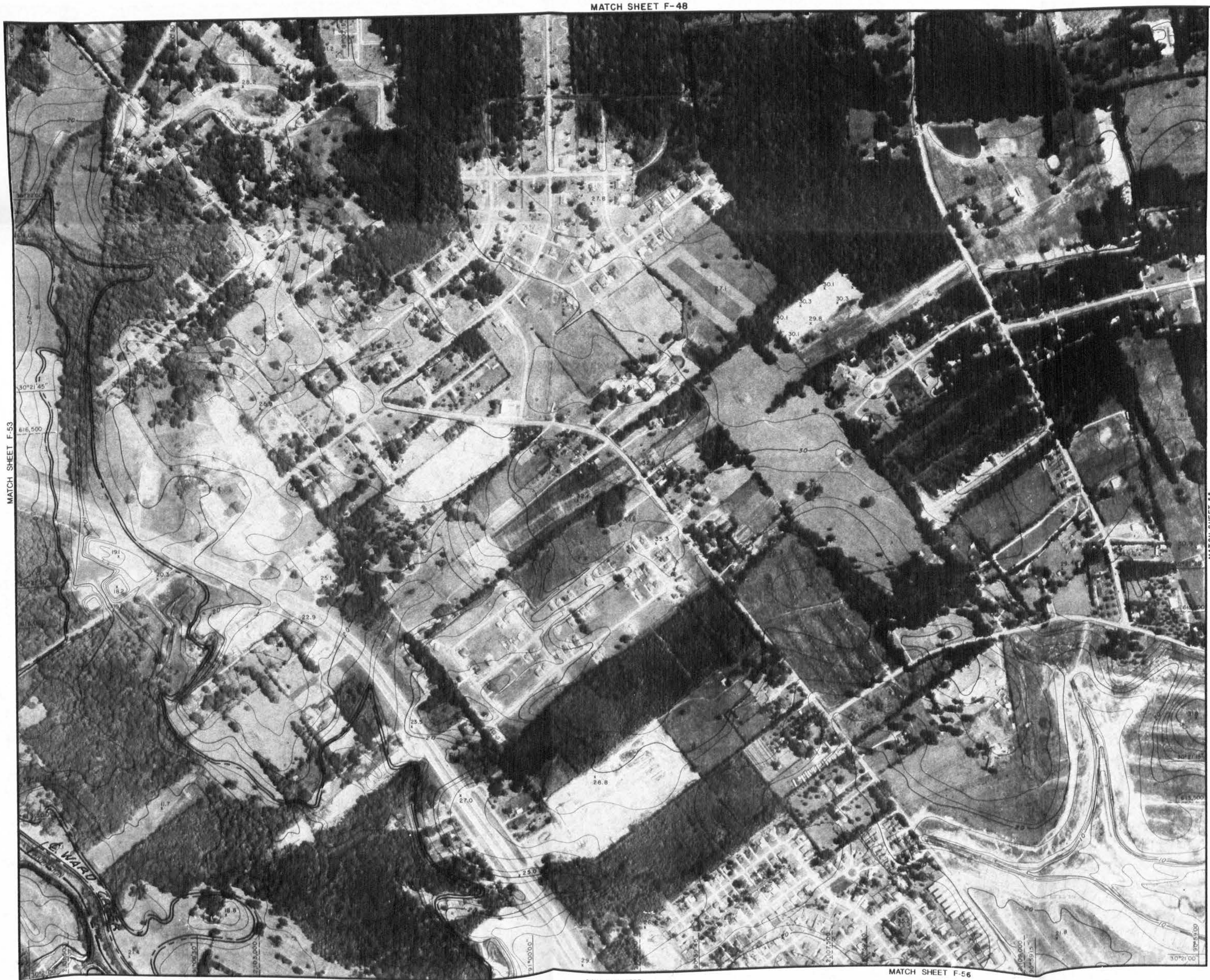
NOTE: ORIGINAL SHEET NO. IS B-66 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
WARD CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994



N

LEGEND

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-67 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

WARD CREEK

25 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-54,A-3

MATCH SHEET F-49

N

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

MATCH SHEET F-61

BAYOU MANCHAC FLOODPLAIN

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS C-52 AND THE FILE NO. IS H-8-30106.

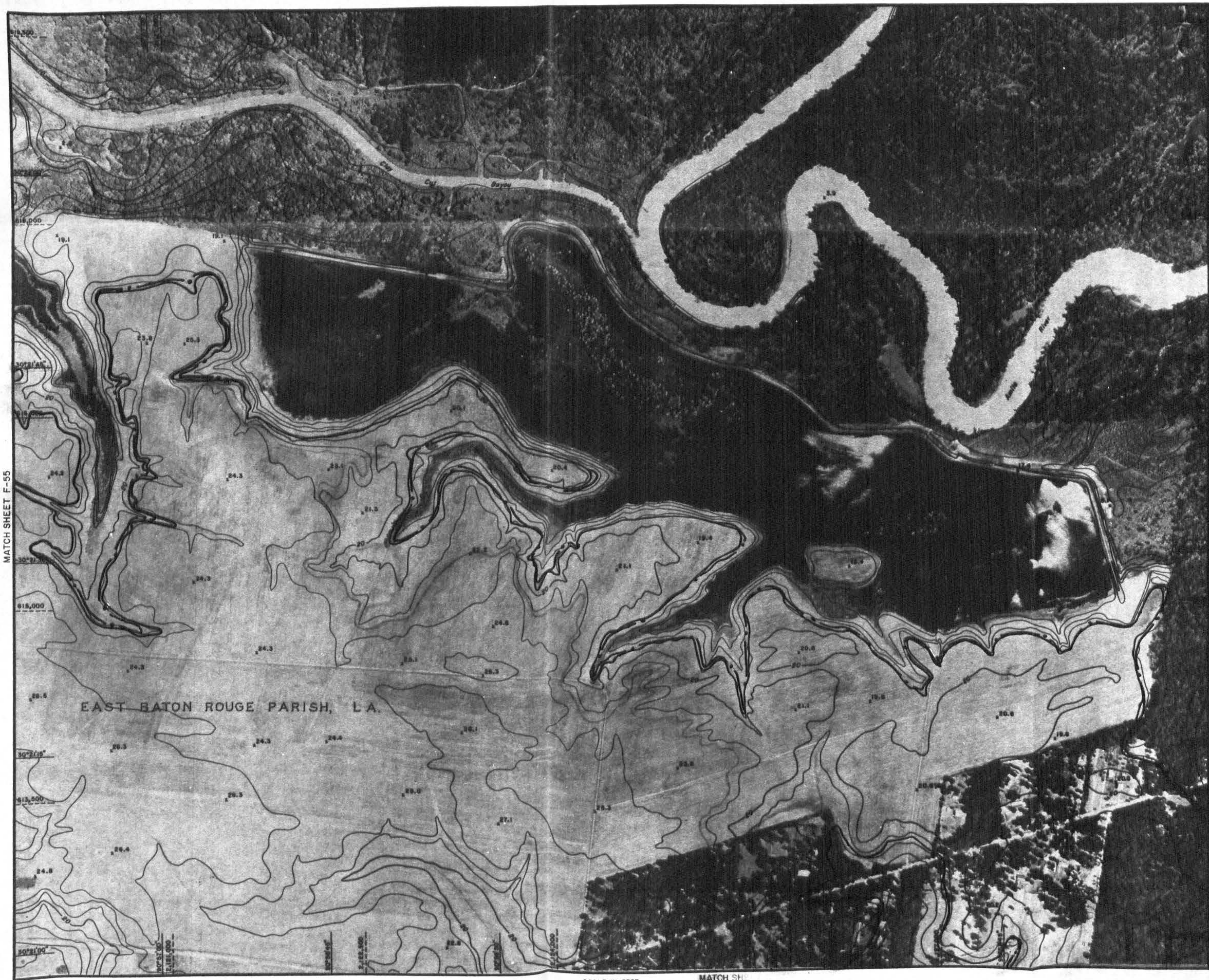
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

CLAY CUT BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994



LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a dashed contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS C-53 AND THE FILE NO. IS H-8-30106.

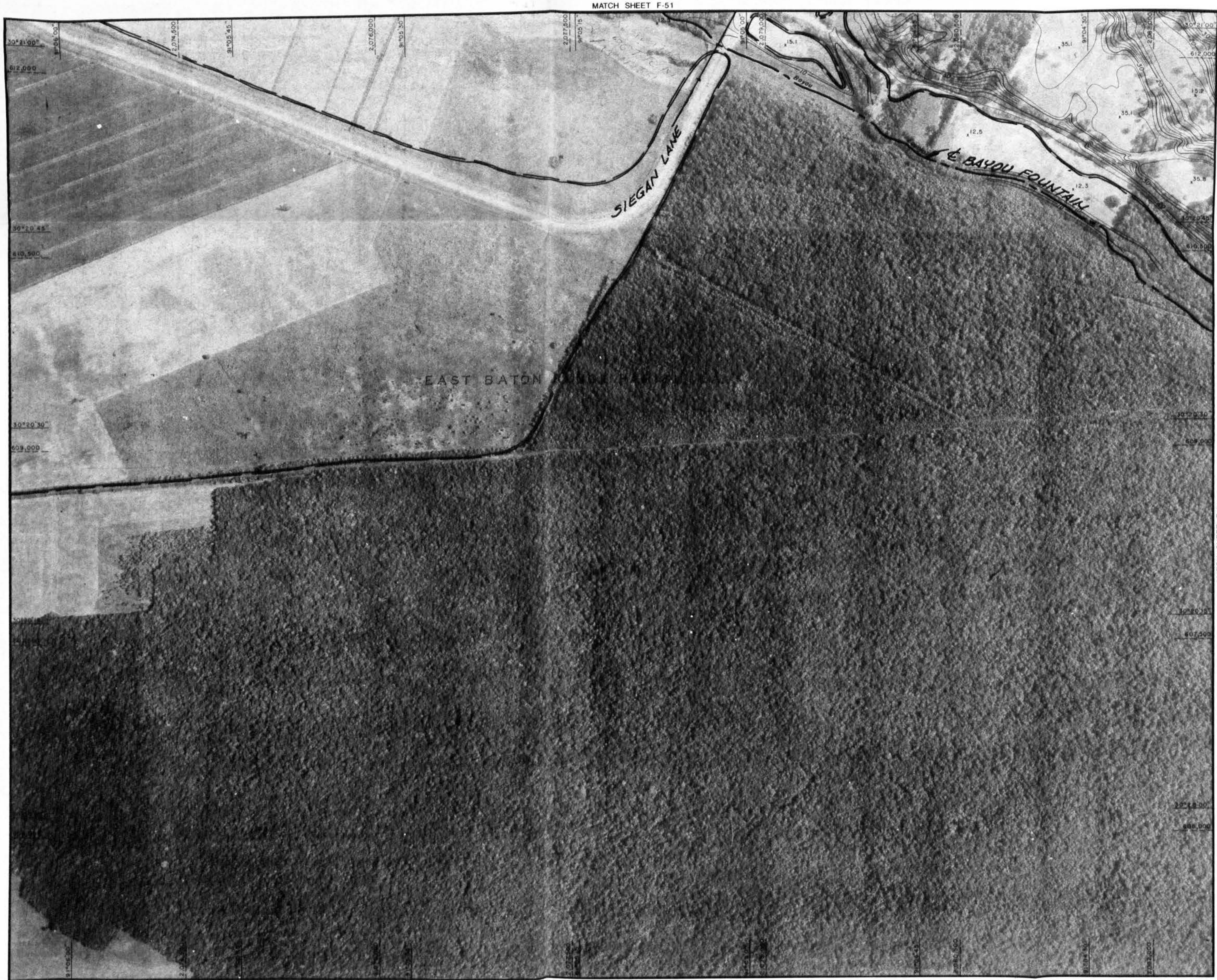
AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
CLAY CUT BAYOU

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-51



LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S, NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA. POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-68 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
BAYOU FOUNTAIN

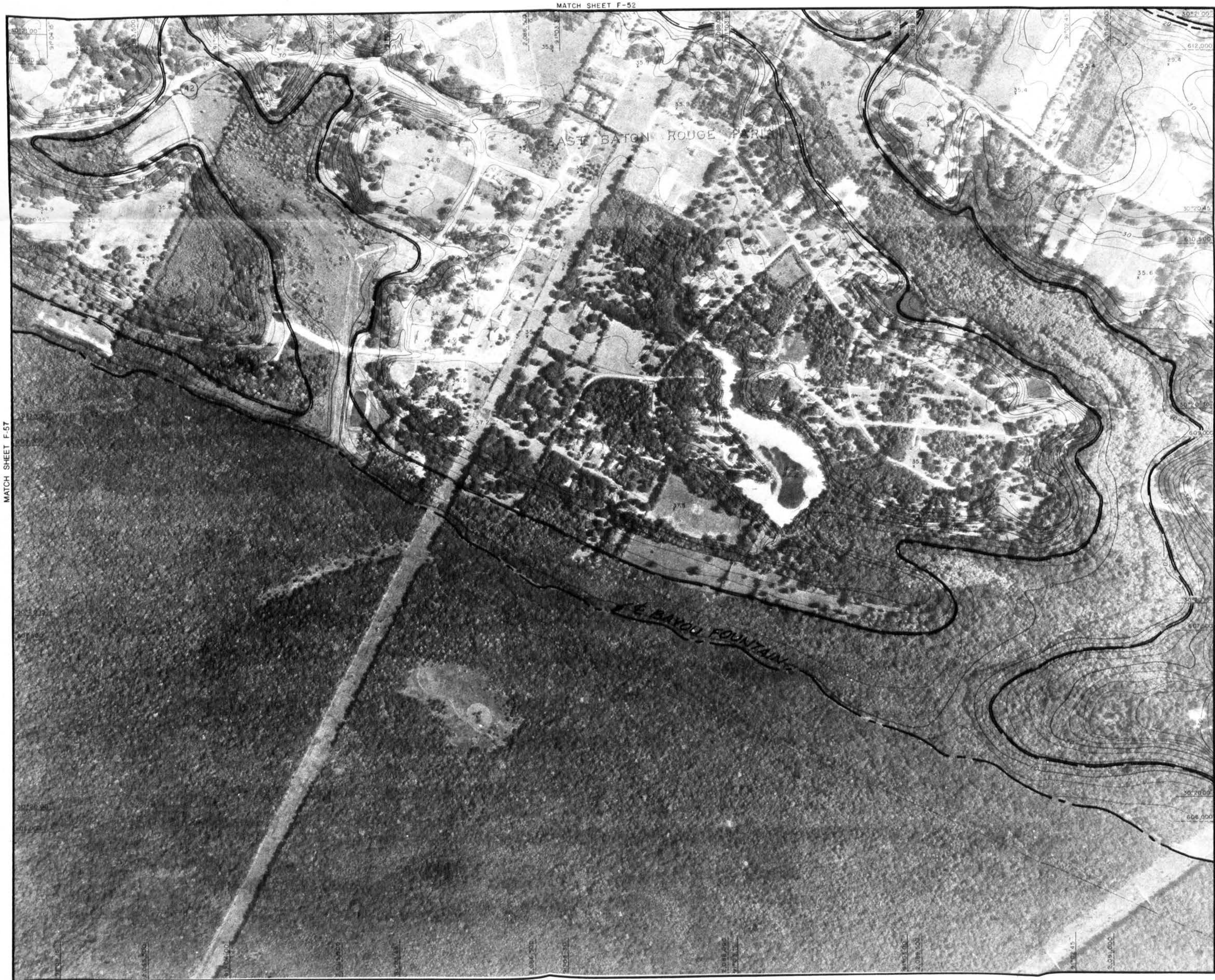
10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-57, A-3

MATCH SHEET F-52



N

LEGEND

10 YEAR FLOOD WITHOUT PROJECT
10 YEAR FLOOD WITH PROJECT
25 YEAR FLOOD WITHOUT PROJECT
25 YEAR FLOOD WITH PROJECT
FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA, POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS 8–69 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH
BAYOU FOUNTAIN

25 & 10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-53

MATCH SHEET F-58

MATCH SHEET F-60

MATCH SHEET F-65

LEGEND

25 YEAR FLOOD WITHOUT PROJECT	——— — ———
25 YEAR FLOOD WITH PROJECT	——— – – ———
10 YEAR FLOOD WITHOUT PROJECT	—————————
10 YEAR FLOOD WITH PROJECT	———— ————

FLOWLINES SHOWN ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-
AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU MANCHAC AND BAYOU FOUNTAIN

25 & 10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-54

MATCH SHEET F-59

MATCH SHEET F-61

LEGEND

WARD CREEK

25 YEAR FLOOD WITHOUT PROJECT

25 YEAR FLOOD WITH PROJECT

BAYOU MANCHAC

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH COMITE DIVERSION

25 YEAR FLOWLINES ARE WITH & WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S, NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS B-71 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU MANCHAC AND WARD CREEK

25 & 10 YEAR OVERFLOW

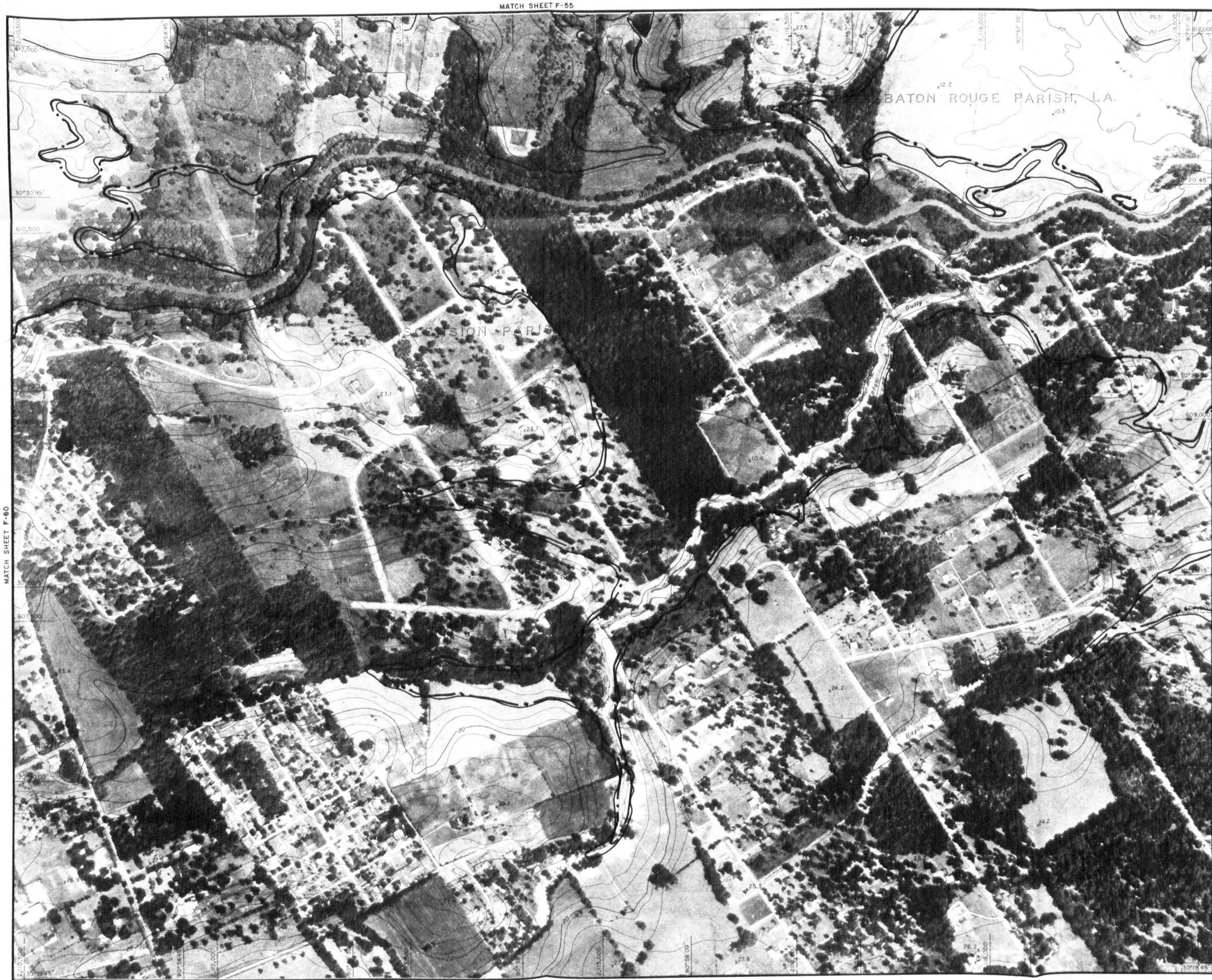
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-60,A-3

MATCH SHEET F-55

MATCH SHEET F-60



MATCH SHEET F-62

N

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS C-59 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU MANCHAC

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEET F-56

MATCH SHEET F-61

MATCH SHEET F-63

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S, NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA. POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS C–60 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

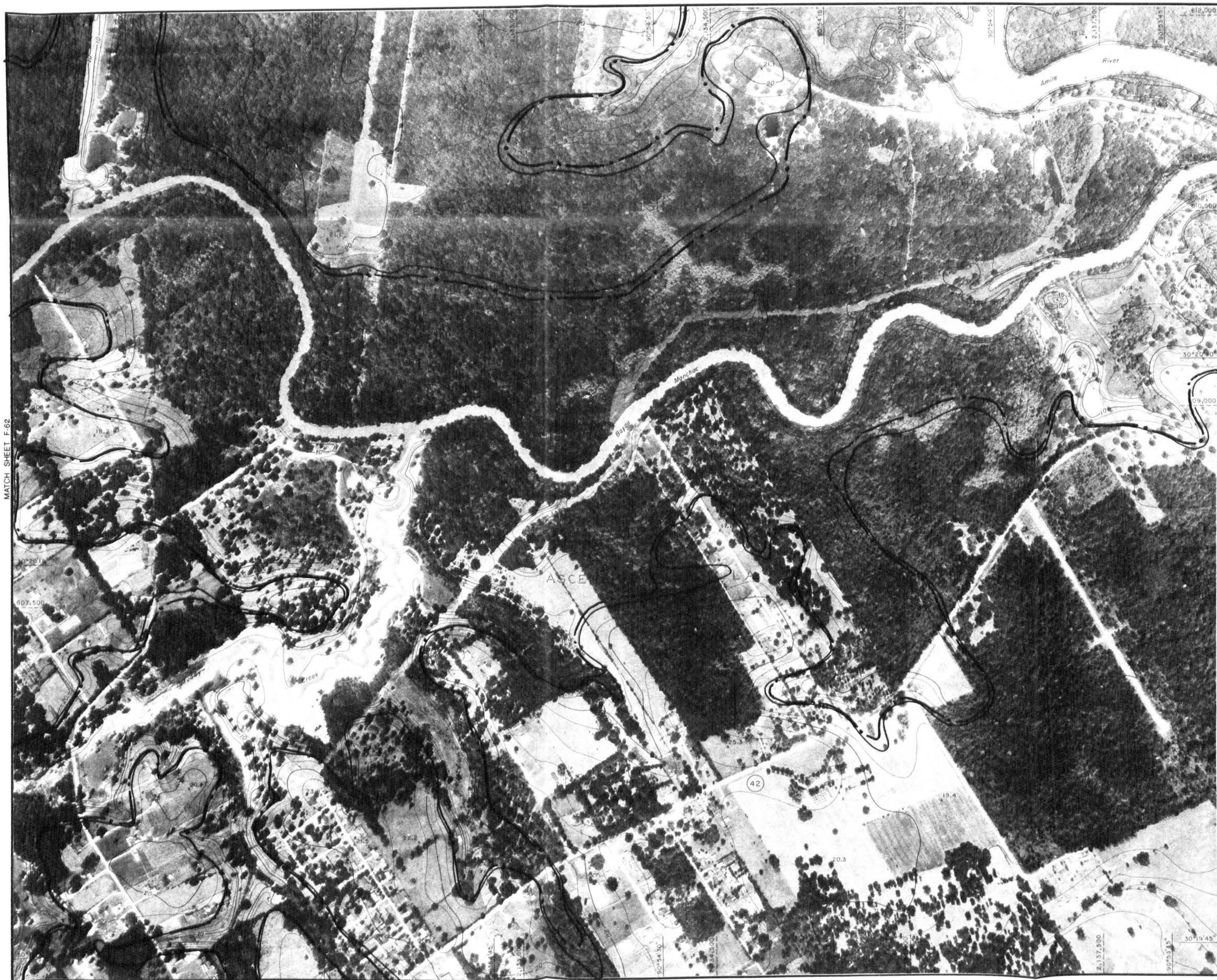
BAYOU MANCHAC

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-62, A-3



N

LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS C-61 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

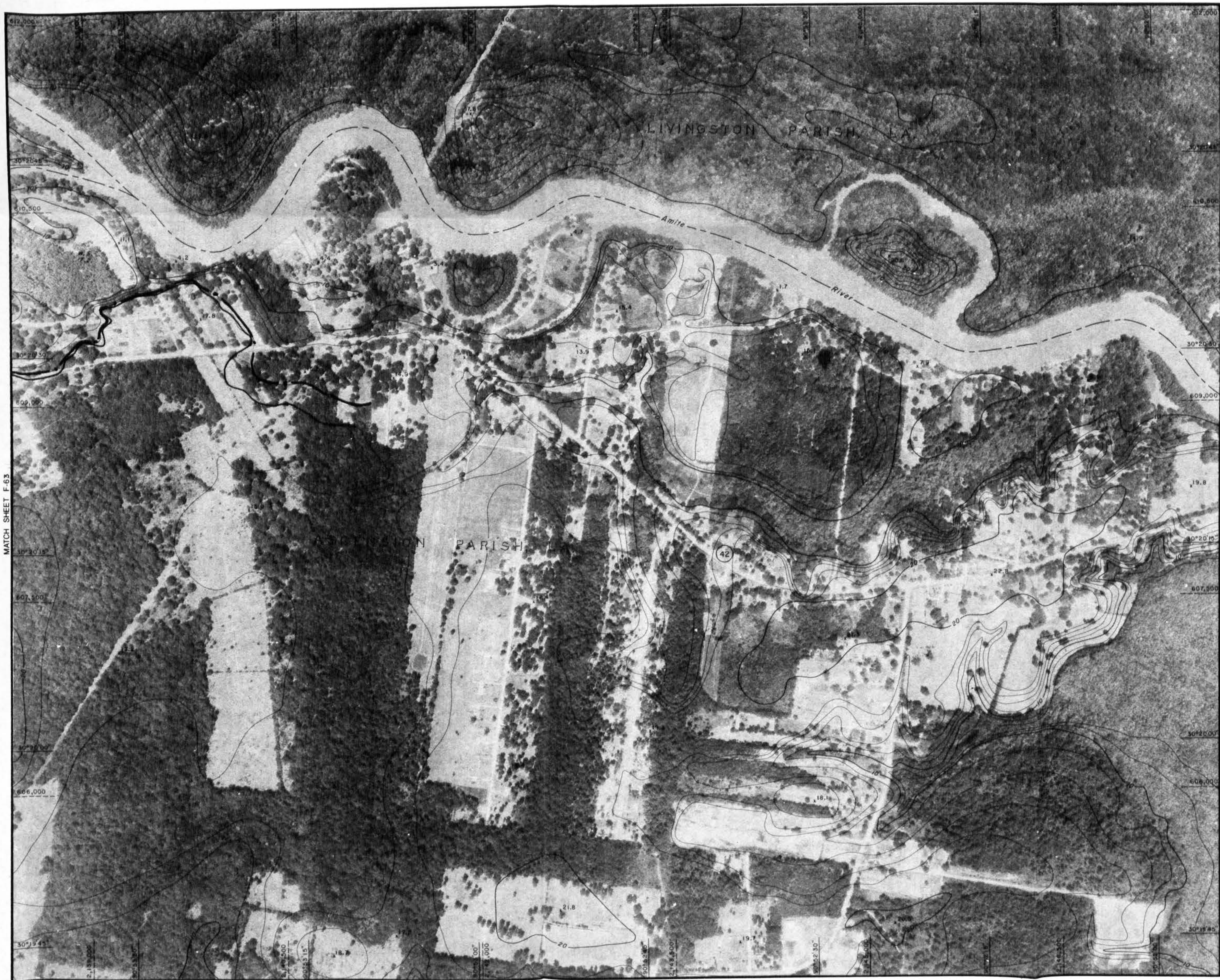
BAYOU MANCHAC

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-63,A-3



N

LEGEND

10 YEAR FLOOD WITHOUT PROJECT
10 YEAR FLOOD WITH COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours on open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION – 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS D-1 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

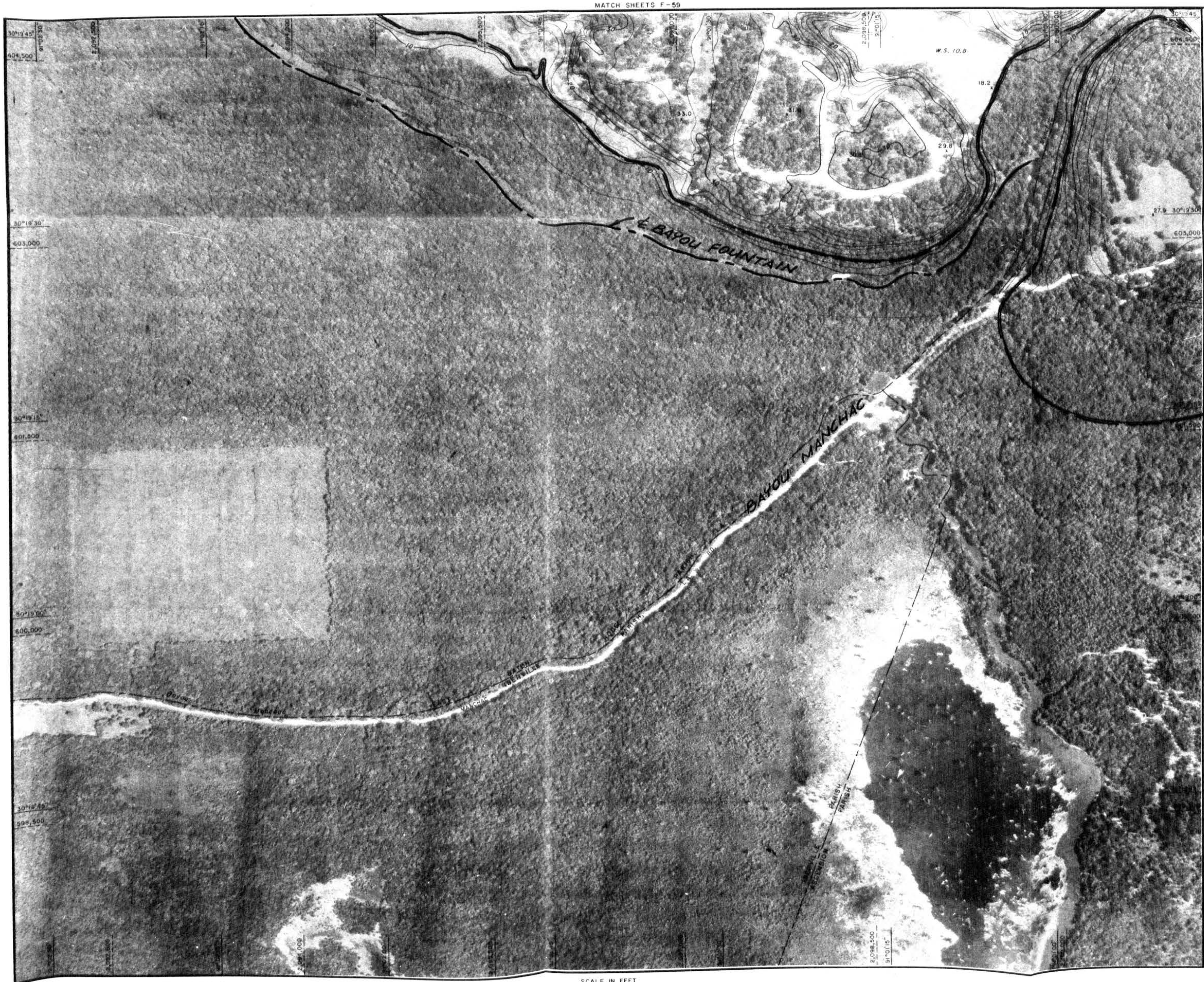
BAYOU MANCHAC

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

MATCH SHEETS F-59



LEGEND

10 YEAR FLOOD WITHOUT PROJECT

10 YEAR FLOOD WITH PROJECT

FLOWLINES ARE WITH AND WITHOUT COMITE DIVERSION

Note: Contours in dense woods are less reliable than contours in open ground. These contours should be treated as a "dashed" contour for mapping purposes.

Note: Spot Elevations not conforming to adjacent contours indicate a structure of differing elevation than the surrounding natural ground contours.

THIS ORTHOPHOTO MAP WAS PRODUCED USING NON-STANDARD CONTROL METHODS. BASIC HORIZONTAL CONTROL FOR AEROTRIANGULATION WAS DIGITIZED FROM 1:24,000 SCALE U.S.G.S. QUADRANGLE MAPS. VERTICAL CONTROL WAS EXTENDED, IN THE FIELD, FROM BENCH MARK AND BRIDGE ELEVATION DATA PUBLISHED BY THE U.S.G.S., NGS, LOUISIANA DEPARTMENT OF HIGHWAYS, LOUISIANA DEPARTMENT OF PUBLIC WORKS AND THE NEW ORLEANS DISTRICT CORPS OF ENGINEERS. THE R.M.S. RESULTS OF THE AEROTRIANGULATION INDICATE A HORIZONTAL ACCURACY WITHIN 15 FEET ON THE N.O.C.O.E. POLYCONIC QUADRILLAGE PROJECTION AND A VERTICAL ACCURACY WITHIN 1 FOOT OF THE NATIONAL GEODETIC DATUM OF 1929.

SCALE IN FEET

300 0 300 600 900

NOTES:
INSIDE THE PLAN AREA POLYCONIC PROJECTION - 1927 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.
PREPARED FROM AERIAL PHOTOS FLOWN MAY 1986

NOTE: ORIGINAL SHEET NO. IS 8-72 AND THE FILE NO. IS H-8-30106.

AMITE RIVER AND TRIBUTARIES, STUDY
EAST BATON ROUGE PARISH

BAYOU MANCHAC AND BAYOU FOUNTAIN

10 YEAR OVERFLOW

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

DATE: SEPTEMBER 1994

PLATE F-65,A-3